BRITISH COLUMBIA VEGETABLE MARKETING GUIDE

Province of
British Columbia

Ministry of
Agriculture and Food

Horticulture Marketing
Revised 1986

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BRITISH COLUMBIA

VEGETABLE MARKETING GUIDE

REVISED

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HORTICULTURE MARKETING
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PREFACE

This guide has been prepared as a reference for producers, wholesalers and retailers of fresh vegetables in British Columbia. Businesses supplying services to the B.C. produce industry have also found previous editions helpful.

While every effort has been made to ensure that the information contained therein is complete, changes in operations require continuous updating especially with regard to the directory section. Should your company listing require updating, please contact our office at the address/telephone listed below.

Each of the commodity sections contain general information on that sector of the industry in British Columbia plus the following headings: varieties grown, nutrition, merchandising and display techniques, utilization, storage recommendations, grade standards, packs, seasonal availability, tariffs and principal suppliers.

Comments are most welcome.

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BRITISH COLUMBIA VEGETABLE MARKETING GUIDE

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PRODUCE WHOLESALERS AND SHIPPERS BY AREA

KEY:	Shipper	S
	Wholesaler	W
	Potatoes	P
	Onions	O
	Rutabagas	R
	Other Vegetables	V

Lower Mainland

W	Allied Food Services (PORV) 1100 Venables Street Vancouver, B.C. V6A 2E2	Leigh Seto	251-2291
W	Al's Salad King Ltd. (PORV) 4121 Halifax Street Burnaby, B.C. V5C 3X3	Betty Lee	294-4974
W	Apex Fruit & Vegetable Processors Ltd. (PORV) 1100-1140 Venables Street Vancouver, B.C. V6A 2E2	Leigh Seto	251-2128
S	B.C. Coast Vegetable Co-operative Assoc. (PORV) 13631 Vulcan Way Richmond, B.C. V6V 1K4	Phil Beall, Gen. Man. Rick Gilmore, Mktg. Scotty Morris, Sales	278-6231
S	B.C. Lower Mainland Farmers Cooperative Association (V) 6857 Burlington Avenue Burnaby, B.C. V5J 4H3	Mary Chow, Manager	453-5855
S	B.C. Tree Fruits Ltd. (FRUITS) 1118 West Fourth Avenue New Westminster, B.C. V3M 1T5	Peter Austin	526-1801
W	Buy-Low Foods Ltd. (PORV) 3151 Arbutus Street Vancouver, B.C. V6J 3Z3	Ray Knight	738-7105
W	Central Foods Company Ltd. (PORV) 888 Malkin Avenue Vancouver, B.C. V6A 2K6	Ken Mack	251-1311
SW	Joseph S. Chow Ltd. (V) 6111 Oak Street Vancouver, B.C. V6M 2W3		261-0255

S	Cloverdale Lettuce & Vegetable Co-operative (V) 5590 152nd Street P.O. Box 1185 Surrey, B.C. V3S 4P6	George Rush, Gen. Man. Bob Armitage, Sales	576-9101
W	G.C. Imports Company Ltd. (V) 600-890 West Pender Street Vancouver, B.C. V6C 1K4	Jose Cuadra	684-2271
W	Italian Produce Company (V) 3522 Porter Street Vancouver, B.C. V5N 4H3	Vincent Abbinante	876-8515
W	Kelly Douglas & Company Ltd. (PORV) 4700 Kingsway Burnaby, B.C. V5H 2C1	Jack Cox	435-1444
W	Konings Wholesale (PORV) 3168 Thunderbird Crescent Burnaby, B.C. V5A 3G4	Wayne McQuillan	421-1711
W	Jim M. Koo Wholesale Produce Ltd. (PORV) 7777 Clarke Drive Vancouver, B.C. V5L 3J3	Buck Koo	253-6622
W	Macdonalds Consolidated Ltd. (PORV) 840 Cambie Street Vancouver, B.C. V6B 4J2	John Christianson Earl Fry	687-1247
W	Motto Enterprises Company Ltd. (V) 102-815 Hornby Street Vancouver, B.C. V6Z 2E6	Ming-Shen Liu	687-3339
W	Neptune Food Supplies (PORV) 12211 Horseshoe Way Richmond, B.C. V7A 4Y4	Ken Vaughen	272-4344
W	Overwaitea Foods (PORV) P.O. Box 7200 Vancouver, B.C. V6B 4E4	Ian McMillan Bob McKilligan	888-1213
W	P.K. Trading Ltd. (V) 620 Malkin Avenue Vancouver, B.C. V6A 2K2	Peter Leung	253-2655
W	Pacific Produce Company Ltd. (PORV) 1020 Malkin Avenue Vancouver, B.C. V6A 3S9	Randy Sung	253-1551

W	Ruby Food Services Ltd. (PORV) 650 Industrial Avenue Vancouver, B.C. V6A 2P6	R. Moller	687-1611
W	Slade & Stewart (PORV) 454 Prior Street Vancouver, B.C. V6A 2E9	Vic Simon	683-3151
W	Southland Distributors (1981) Ltd. (PORV) 886 Malkin Avenue Vancouver, B.C. V6A 2K7	Ron Collier	253-2629
W	Swartz Bros. Ltd. (PORV) 890 Malkin Avenue Vancouver, B.C. V6A 2K6	Dan Weinstein	255-6545
W	Terminal Fruit & Produce Ltd. (PORV) 880 Malkin Avenue Vancouver, B.C. V6A 2K6	John Chinn	251-3383
W	Thirty-One Purchasing Service Ltd. (PORV) 101 West Hastings Street Vancouver, B.C. V6B 1H4	Bill Blake	688-3132
W	Tri-Produce Corp. (PORV) P.O. Box 348 3446 Lougheed Highway Surrey, B.C. V3T 5B6	Eric Sung	253-2333
W	West Coast Produce (PORV) 19676 Telegraph Trail Surrey, B.C.	Nick Cost	888-2299
S	Western Greenhouse Grower's Co-op Assoc. (V) Box 1236, Station 'A' Surrey, B.C. V3S 2R3	Les Pilchak, Exec.V.P. Rick Wallace, Mktg.	576-8525
W	Wild West Organic Harvest Co-op (PORV) 2471 Simpson Road Richmond, B.C. V5T 1E6		276-2411
W	Woodward's Stores Ltd. (PORV) 101 West Hastings Street Vancouver, B.C. V6B 4G1	Bill Blake Klaus Newman	684-5231
W	Tom Yee Company Ltd. (PORV) 645 Malkin Avenue Vancouver, B.C. V6A 3V7	Harry Tom	251-1561
W	Yen Bros. Produce Ltd. (PORV) 730 Terminal Avenue Vancouver, B.C. V6A 2M5	Raymond Yen	669-6522

Vancouver Island

W	B.C. Produce Company (PORV) 529 Pandora Avenue Victoria, B.C. V8W 1N5	Quan Ming	383-2125
S	Cowichan Valley Produce Ltd. (V) 2699 Sahilton Road P.O. Box 741 Duncan, B.C. V9L 3X9	Ferd Kallstrom	748-1235
W	General Fruit & Produce (PORV) 2885 Quesnel Street Victoria, B.C. V8T 4K2	Bob Lee Norm Lee	384-9325
S	Island Vegetable Co-op Assoc. (PORV) 2805 Quesnel Street Victoria, B.C. V8T 4K2	Darryl Peterson	382-8203
or	6451 Portsmouth Road S.5, Dock 7, R.R. 1 Lantzville, B.C.	Roy McBride	390-2312
W	Kelly Douglas & Company Ltd. (PORV) 846 Viewfield Road Victoria, B.C. V8W 2R4	Dell Lang	382-9346
W	Kelly Douglas & Company Ltd.(PORV) P.O. Box 514 2575 McCullough Road Nanaimo, B.C. V9R 5L5	Colin McArthur	758-2494
W	Kelly Douglas & Company Ltd. (PORV) (Cash & Carry) 2254 McGarrigle Road Nanaimo, B.C. V9S 4M6	Kerry Orchard	758-5141
W	Kelly Douglas & Company Ltd. (PORV) 478 Fourth Street Courtenay, B.C. V9N 1H1	Trev Ruckman	338-8717
W	MacDonalds Consolidated Ltd. (PORV) 2924 Jacklyn Road Victoria, B.C. V9B 3Y5	Bill Bowes	474-1188
SW	Michell Farms (PORV) 6858 Patricia Bay Highway Victoria, B.C. V8Y 1V1	Dave Michell	652-1582
W	Slade & Stewart (PORV) 95 Esquimalt Road Victoria, B.C. V9A 3K8	Al Lukican	382-3181

S	Vancouver Island Greenhouse Grower's Co-op (V) 2180 Keatting Cross Road Victoria, B.C. V8X 3X1	John Merritt	652-3971
W	Victoria Unity Produce Ltd. (PORV) 2111 Government Street Victoria, B.C. V8T 4P2	Charlie Lowe	384-3414

Okanagan - Kootenay

S	Abetkoff Farms (POR) R.R. 1 Grand Forks, B.C. V0H 1H0	Nick Abetkoff	442-8431
W	Armstrong Foods & Produce (POV) P.O. Box 249 Otter Lake Road Armstrong, B.C. V0E 1B0	Raink VanDerMeer	546-6718
W	Barney's Produce Sales Ltd. (PORV) 675 Willow Park Road Kelowna, B.C. V1X 5H9	Wayne Hrycan	765-4434
SW	B.J.'s Okanagan Orchards (B.C.) Ltd. (PORV) 4-715 Evans Court Kelowna, B.C. V1X 6G4	Bert Hume	765-4404
SW	Covert Farms (POV) P.O. Box 1050 Oliver, B.C. V0H 1T0	Mike Covert	498-2731
SW	Lyle W. Dawson (PORV) P.O. Box 130 Osoyoos, B.C. V0H 1V0	Lyle Dawson	495-6207
W	F. & W. Wholesale Ltd. (PORV) P.O. Box 490 Trail, B.C. V1R 4L7	Cliff Grills	368-5518
SW	Hanson Orchards Ltd. (PORV) R.R. 3, East Kelowna Road Kelowna, B.C. V1Y 7R2	Jim Hanson	860-2703
S	Interior Vegetable Marketing Agency Co-op (PORV) P.O. Box 910 Vernon, B.C. V1T 6M8	Al Lypchuk	545-0694
W	Kelly Douglas & Company Ltd. (PORV) 900 Industrial Road, No. 1 Cranbrook, B.C. V1C 4C6	Robert Mackay	426-2261
W	Kelly Douglas & Company Ltd. (PORV) 1005 Ethel Street Kelowna, B.C. V1Y 2W3	Richard Konrath	762-2106

SW	Palowna Orchards Ltd. (PORV) R.R. 1 Osoyoos, B.C. V0H 1V0	John Douglas	495-6286
W	Scott National Company Ltd. (PORV) P.O. Box 550 105 Van Horne Street Cranbrook, B.C. V1C 4J1	Cecil Currie	426-2251
W	Slade & Stewart Ltd. (PORV) P.O. Box 236 Penticton, B.C. V2A 6K3	Ed Lekei	492-4327
S	Sumac Farms P.O. Box 9 Okanagan Falls, B.C. V0H 1R0	Jim Leir	497-5100
S	Valley Fruit Stand Company Ltd. (PORV) 2902 - 43rd Avenue Vernon, B.C. V1T 3L5	Ray Campbell	542-3830

Thompson - Cariboo

W	Consolidated Grocers Ltd. (PORV) P.O. Box 905 Kamloops, B.C. V2C 5M8	Larry Chmielewski	374-6696
W	Kelly Douglas & Company Ltd. (PORV) P.O. Box 540 Kamloops, B.C. V2C 5L4	Grant McGill	372-7137

Central Interior

W	Kelly Douglas & Company Ltd. (PORV) P.O. Box 2220 Prince George, B.C. V2N 2K1	Richard Larmand	564-7221
W	Kelly Douglas & Company Ltd. (PORV) P.O. Box 127 Prince Rupert, B.C. V8J 3P4	Ron Durant	624-2158
	Kelly Douglas & Company Ltd. (PORV) P.O. Box 87 Dawson Creek, B.C. V1G 4G1	Jack Shrieves	782-3345
W	Macdonalds Consolidated Ltd. (PORV) P.O. Box 300 Dawson Creek, B.C. V1G 4G8	Vern Haglof	782-3383
W	Sunspun Food Service - Division of Kelly Douglas & Company Ltd. (PORV) P.O. Box 788 955 First Avenue Prince George, B.C. V2L 4T6	Darwood Dobie	564-5114

W Shoppers Wholesale Food Company (PORV)
1959 Nicholson Street
Prince George, B.C. V2N 2Z9 Keith Falef 562-6655

W Slade & Stewart (PORV)
1014 Great Street
Prince George, B.C. V2N 2K8 Cliff Sinclair 562-2474

PRODUCE PRICING AND HOW IT IS ESTABLISHED IN BRITISH COLUMBIA AT THE PRODUCER, AGENCY, WHOLESALE AND RETAIL LEVELS

Pricing of produce, like any other item, is a measure of the value of goods or service and is actually an indicator of the supply-demand balance at a point in time. Over the long run, prices must reflect an adequate return to producers to cover their total costs and return adequate profit. In the case of fresh vegetables, virtually all the products grown and marketed in British Columbia are available in large quantities from other areas of supply. These include Washington, Oregon, California, Florida, Mexico and for a few items Alberta and Ontario. As might be expected, vegetable producers who supply the large volume wholesale market compete directly with these alternate sources of supply. Thus the price received by B.C. growers is largely determined by the landed import price from the major competing area of supply.

DETERMINATION OF THE LANDED IMPORT PRICE

Several factors are important in determining the landed import price. The F.O.B. price (price for graded and packed product at origin) is converted into Canadian currency at the current exchange rate. If a seasonal tariff is in effect, it is then calculated at the appropriate rate for the item under consideration. To this value, the transportation cost per case from the point of origin to British Columbia is calculated and added in. Finally, palleting, cooling, inspection and brokerage fees are added to give the landed price per case in British Columbia. An example of lettuce is as follows:

Iceberg, case of 24 - F.O.B. Salinas, California, $4.50 U.S.
Canadian currency value = $4.50 x 1.38 = $6.21
Seasonal tariff application 15% ad valorem - 6.21 x 1.15 = 7.14

$$\text{Transportation cost per case} = \frac{\text{straight load trucking fee}}{\text{number of cases per truck}} = \frac{1950}{900} = 2.16$$

Cooling charges per case		.75
Brokerage, customs charges per case		.10
Palletizing charges per case		.20
Landed Import Price Vancouver	(in Cdn. funds)	$10.35

Producers of non-regulated commodities (not regulated by the B.C. Vegetable Marketing Commission) such as broccoli, radishes, green onions are required to grade, pack, transport and market their products themselves. Thus, the price they can expect to receive for graded and packed product delivered to the wholesaler is the landed import price if quality and service is equal to or better than the imported product and other local growers are following good pricing practises. For regulated commodities, the landed import price is the price producer selling agencies compete with.

If local quality and service is recognizably better than imports such as is usually the case with greenhouse products, considerable price premiums can be obtained. On the other hand, poor quality produce is usually always difficult to sell and considerable discounts are usually necessary.

Considerable marketing costs are incurred in the packing, warehousing, distribution and retailing of fresh produce. Gross mark-up for the wholesaling function usually adds approximately 22% value to the grower or grower agency price for graded and packed product. Gross mark-up for the retailing function usually adds approximately 45% to the wholesale price. As a result, retail prices on a per pound basis are usually approximately 1.7 to 1.8 times the producer price (but this varies dramatically with different products and merchandising practises.). A considerable portion of the wholesale to retail margin is often the result of shrink in weight and or product loss due to quality deterioration over time. High volume turnover is essential to profits in the wholesale and retailing of fresh produce.

BRITISH COLUMBIA VEGETABLE MARKETING COMMISSION

212 - 17704 - 56th Avenue
Surrey, B.C. V3S 1C7
Telephone (604) 576-8291

STAFF:
Secretary Manager: Ralph Towsley
Promotional Manager: Dori Martin
Inspections: Chuck Amor

The British Columbia Vegetable Scheme passed by Order in Council in 1980 provided the framework for the formation of the B.C. Vegetable Marketing Commission. The Commission is charged under the Natural Products Marketing (B.C.) Act to promote control and regulate the production and marketing of vegetables in the Province of British Columbia. The Scheme divides the province into three districts and provides methods by which members are elected on regular basis by the commercial producers in each district. Growers of regulated product are required to register with the Commission each year and supply information on their growing plans so that appropriate marketing and promotional plans can be put into effect to sell the crop to the best advantage of the grower.

All regulated product must be sold in containers approved by the Commission but such containers generally follow the regulation in the Canada Agriculture Product Standards Act with some minor differentiations. Growers products are offered to the market through designated sales agencies in each district.

The Commission supervises a quota system which comes into effect when the supply of a particular vegetable product exceeds its demand. An individual's growers quota is based on his average sales over a period of 3 or 5 years depending on the product. However, a grower is not limited to growing only his quota. The Commission attempts to sell all production except that those people who have traditionally served the market and have earned quota are given preference over growers who have not participated in the market before. Once quota has been filled as outlined in the regulations of the Commission, then all product is sold on an equal share basis as long as market demand is there. Minimum prices are set for the fresh market by the

Commission which takes into account the landed price of product from other production areas either outside the province or outside the country. These minimum prices are set to bring stability to the market and while maintaining a competitive position prevents grower to grower competition which on unregulated product often forces prices down below the competitive market levels.

In addition to the licencing and registration of growers, the Commission licence wholesalers, processors and also licence farmer owned producer/vendor stands which are established on the producers farm property or adjacent to it.

In addition to the marketing of fresh vegetables on a weekly basis, the Commission assists the various processing crops associations and the processors to negotiate annual contracts for growing of certain vegetables specifically for the processing market. Once these contracts are established, then the Commission ensures that the terms of the contracts are met by all parties. Processing crops which the Commission regulates are as follows:

> asparagus, bush beans, sweet corn, green peas, potatoes, broccoli, brussel sprouts, cauliflower, beets, carrots and field tomatoes when available, and strawberries for processing.

The Act gives the Commission the power to enforce its regulations and this is done by an inspection staff which monitors the activities in the market place on a regular basis.

AGENCIES OF THE BRITISH COLUMBIA
VEGETABLE MARKETING COMMISSION

Lower Mainland (District I)

B.C. Coast Vegetable Cooperative Association
13631 Vulcan Way
Richmond, B.C. V6V 1K4

Mr. Phil Beall, General Manager
Mr. Rick Gilmore, Marketing Manager
Mr. Scotty Morris, Sales Manager
Telephone: Sales (604) 278-6234 General Office 278-6234

Sales and packing of potatoes, cabbage, topped carrots, yellow onions, rutabagas, parsnips and topped beets.

Cloverdale Lettuce and Vegetable Cooperative Association
5590 - 152nd Street
P.O. Box 1185
Surrey, B.C. V3S 4P6

Mr. George Rush, General Manager
Mr. Bob Armitage, Sales Manager
Telephone: Sales (604) 576-8611 General Office 576-9101

Sales and packing of iceberg lettuce, greenhouse butter lettuce, cauliflower and celery.

Western Greenhouse Growers Cooperative Association
15350 No. 10 Highway
P.O. Box 1236, Station 'A',
Surrey, B.C. V3S 2B3

Mr. Les Pilchak, Executive Vice President
Mr. Rick Wallace, Marketing Manager
Mr. Craig Laker, Sales Manager
Telephone: Sales (604) 576-8611 General Office 576-8525

Sales and packing of greenhouse tomatoes, long English cucumbers, white spine cucumbers.

Vancouver Island (District II)

Island Vegetable Cooperative Association
2805 Quesnel Street
Victoria, B.C.
V8T 4K2

Mr. Darryl Peterson, General Manager
Telephone: (604) 382-8203

Sales and packing of potatoes, cabbage, cauliflower, rutabagas, parsnips, carrots, yellow onions, beets.

Island Vegetable Cooperation Association
6547 Portsmouth Road
Nanaimo, B.C.

Mr. Ray McBride, Manager
Telephone: (604) 390-2312

Sales and packing of potatoes, cabbage, rutabagas, parsnips, carrots, yellow onions.

Port Potato Company
Box 213
Port Alberni, B.C.
V9Y 7M7

Mr. Lyle Price, Manager
Telephone: (604) 723-7000

Sales and packing of potatoes, carrots, rutabagas, parsnips, cabbage,cauliflower.

Vancouver Island Greenhouse Growers Cooperative
2180 Keatings Crossroad
Saanichton, B.C.

Mr. John Marrot, Manager
Telephone: (604) 652-3971

Sales and packing of greenhouse tomatoes, long English and white spine cucumbers.

Interior - Okanagan - Kootenay (District III)

Interior Vegetable Marketing Agency Cooperative
2908 - 31st Avenue
P.O. Box 910
Vernon, B.C. V1T 6M8

Mr. Al Lypchuk, Manager
Telephone: Sales (604)545-0694 General Office 545-5100

Sales of asparagus, potatoes, greenhouse tomatoes, and long English cucumbers, yellow onions, silverskin onions, Spanish onions, cabbage, rutabagas, parsnips.

Regulated and Unregulated Commodities Under the B.C. Vegetable Marketing Commission

FRESH VEGETABLES

Product	Region 1: Lower Mainland	Region 2: Vancouver Island	Region 3: Interior
Asparagus	-	-	+
Beets - topped	+	+	+
Cabbage - green	+	+	+
- red	+	+	+
Carrots - topped	+	+	+
Cauliflower	+	*	+
Celery	+	-	-
Cucumbers - greenhouse	+	+	+
Lettuce - head	+	*	-
Marrow	-	-	-
Onions - yellow	+	+	+
Parsnips	+	+	+
Potatoes	+	+	+
Pumpkins	-	-	-
Rutabagas	+	+	+
Squash	-	+	-
Tomatoes - greenhouse	+	+	+

+ = regulated crop required to be shipped through an agency of the Commission
- = unregulated
* = not shipped through agencies of the Commission

PROCESSING VEGETABLES

Product	Region 1: Lower Mainland	Region 2: Vancouver Island	Region 3: Interior
Asparagus	-	-	+
Beets	+	-	-
Broccoli	+	-	-
Bush Beans	+	-	-
Carrots	+	-	-
Cauliflower	+	-	-
Corn	+	-	-
Peas	+	-	-
Potatoes	+	-	-
Strawberries	+	-	-
Tomatoes - field	-	-	-

+ = regulated crop
- = not regulated

B.C. LOWER MAINLAND FARMERS COOPERATIVE ASSOCIATION

6857 Burlington Avenue
Burnaby, B.C.
V5J 4H3
Telephone (604) 453-5855
Manager: Mary Chow

The B.C. Lower Mainland Farmers Cooperative Association is a long established group separate from the B.C. Vegetable Marketing Commission producing a wide variety of vegetables. There are approximately 40 growers which have probably the most intensely cultivated 400 acres of vegetable production in North America. From May through October, this producer group is the major source of supply for the Vancouver Wholesale market of the following vegetables:

Spinach
Green Onions
Parsley
Radishes
Fancy Lettuces
  red, romaine,
  leaf, butter,
  endive
Bunch carrots
Bunch beets

Dillweed
Leeks
Bok Choy
Sui Choy
Choy Sum
Gai Low
Gai Choy

The majority of the growers are located in the South Burnaby area along South East Marine Drive with the balance located in Richmond and Surrey. For further information contact the above office.

TERMINOLOGY USED IN MARKETING REPORTS

QUALITY

Quality shall be deemed to include size, colour, shape, texture, cleanness, freedom from defects, and other ore permanent physical properties of a product which affect its market value.

The following terms when used in market news reports in connection with "Quality" shall be interpreted as follows:

FINE: Better than good. Superior in appearance, colour and other quality factors. "Fancy" is not used as a synonym for "Fine".

GOOD: In general, stock which has a high degree of merchantability with small percentage of defects. This term includes Canada/U.S. No. 1 stock generally, and 85% Canada/U.S. No. 1 or better quality on some commodities such as lettuce from the U.S.

FAIR: Having a higher percentage of defects than "Good". From a quality standpoint, roughly around 75% Canada/U.S. No. 1 quality with some leeway in either direction.

ORDINARY: Having a heavy percentage of defects, with a low degree of salability except to "low prices" trade. More than 50% grade defects.

CONDITION

Condition shall be deemed to include stage of maturity, decay, freezing injury, shriveling, flabbiness or any other deterioration which may have occurred or progressed since the product was harvested and which may continue to progress.

The following terms when used in market news reports in connection with "Condition" shall be interpreted as meaning:

GOOD: Means such condition as does not justify any price reduction because of condition factors.

FAIR: Means has a slight degree of off-condition factors which may warrant a small price reduction as compared to "Good".

ORDINARY: Means having a heavier degree of off-condition factors which may warrant a substantial price reduction as compared to "Good".

POOR: Means so badly off-condition as may warrant a price reduction. A combination of terms may be used in wide range in quality and/or condition, as poor to ordinary, ordinary to fair, fair to good, etc. These terms may be further qualified by use of such terms as generally, mostly, some, few, etc., as defined in the last column.

DEMAND

Demand as used in news reports represents the immediate or current desire for a commodity coupled with the ability and willingness of the buyer to pay for it.

PRACTICALLY NO DEMAND: Indicates a stagnant condition of the market with very little interest and very few or no sales.
DEMAND VERY LIGHT: Few buyers are interested in trading.
DEMAND FAIRLY LIGHT: Buyer interest and trading slightly below average.
DEMAND MODERATE: (alt. Fairly Good) Average buyer interest and trading.
DEMAND GOOD: This phrase indicates firm confidence on the part of the buyers that general market conditions are good. Trading is more active than normal.
DEMAND VERY GOOD: Offerings or supplies are rapidly absorbed.
DEMAND EXCEEDS SUPPLY: Usually indicates a supply condition where some buyers are unable to secure stock for immediate shipment or delivery.

MARKET TERMS

PRICE TREND: Price trends are used in news reports to indicate comparisons with conditions and prices which prevailed on the previous day, and in certain situations, conditions expected on the day following or both. Terms are affected only by price changes on comparable quality not by price ranges that may vary due to availability of offerings from one day to the next.
MARKET HIGHER: When majority of sales are at prices measurably higher than the previous trading session.
MARKET FIRM: prices tending higher, but not measurably so.
MARKET SLIGHTLY HIGHER: Represents a condition in which price advances are less definite and less general than in Market Higher. The price range need not be higher, but it should show a greater volume of sales at the higher end of the range, making a definitely high average, or Mostly price.

MARKET STEADY: Prices unchanged from previous trading session.

MARKET ABOUT STEADY: A condition in which minor variations are noted, either above or below the price levels of the preceding day, but which are apparently due to influences affecting primarily a few individual cases and which do not indicate any general upward or downward sentiment or trend for the market as a whole.

MARKET BARELY STEADY: Indicates a condition of decreasing confidence on the part of most sellers because of decreased demand, supplies not cleaning up, heavier supplies in prospect, etc. Prices are holding at the level of the day before but a weaker undertone prevails.

MARKET DULL: Represents a period of relative market inactivity but no definite tendency toward market changes. It is not to be used to indicate a condition of market weakness, nor of lower prices.

MARKET UNSETTLED: Indicates a condition of market uncertainty with lack of agreement on the part of the trade as to whether prices tend to be lower or higher. It may also represent a waiting attitude pending the development of outcome of extraneous factors which might affect the market, such as storm damage, labour troubles, etc., and these factors may be mentioned such as Market unsettled account of truckers' strike, etc.

MARKET SLIGHTLY LOWER: Represents a condition in which price declines are not as definite nor as general as in Lower. The price range need not necessarily be lower, but it should show a greater volume of sales at the lower end of the range making a definitely lower average or Mostly price.

MARKET LOWER: When prices for most sales are measurably lower than previous trading session.

COMMON TYPE OF SALES

SALES F.O.B. SHIPPING POINT (FOBSP): means that the produce quoted or sold is to be placed free on board the boat, car, truck or other agency of land transportation at shipping point, in suitable shipping condition and that the buyer assumes all risk of damage and delay in transit not caused by the seller irrespective of how the shipment is billed. The buyer shall have the right of inspection at destination before goods are paid for to determine if the produce shipped complied with the terms of the contract of order at time of shipment. Such right of inspection does not convey or imply any right of rejection by the buyer because of any loss, damage, deterioration or change which has occurred in transit. These sales may be made either on the wire on a cash basis by a local representative of the buyer, or by any other terms agreed upon by the parties involved in the sale.

DELIVERED SALES, SHIPPING POINT BASIS (FOBDEL): Delivered sale means that the produce is to be delivered by the seller on board car or by truck, or on dock if delivered by boat at the market agreed upon, free of any charges for transportation or protective services. The seller assumes all risks of loss or damage in transit not caused by the buyer. Delivered sales shipping point basis represents the shipping point basis price which is the delivered price less transportation and protective service charges. In a few sections, the rate from one central point is used in figuring the delivered price regardless of the point from which the car is actually shipped. For example, delivered sales of Maine potatoes are based on the rate from Presque Isle. Where a common basing point is used, this should be shown with the basis of sales, e.g. delivered sales, shipping point basis, Presque Isle rate.

SOURCES OF MARKET INFORMATION FOR VEGETABLES IN VARIOUS COMPETING AREAS OF SUPPLY

WASHINGTON STATE

1. Federal State Market News
2015 South First Street - Room 4
Yakima, Washington 98903
Ace Gloe, U.S.D.A. Reporter
Telephone: (509) 575-2492
Phone-in Tape Pricing: (509) 452-7859

2. Federal State Market News
2505 South McClellan Street
Seattle, Washington 98144
Paul Eanes, U.S.D.A. Reporter
Telephone: (206) 442-7885

CALIFORNIA

1. Federal State Market News
Salinas, California
Telephone: (408) 443-3020
Phone-in Tape: (408) 449-7221
- lettuce, celery, cauliflower, broccoli, asparagus

2. Federal State Market News
Stockton, California
Telephone: (209) 948-7777
- asparagus

3. Federal State Market News
Fresno, California
Telephone: (209) 445-5026
- carrots, tomatoes

4. Federal State Market News
Bakersfield, California
Telephone: (805) 327-5596
- potatoes, carrots

FLORIDA

Federal State Market News
Orlando, Florida
Telephone: (305) 628-8686
Phone-in Tape: (813) 657-2793
- tomatoes - April to July

ARIZONA

Federal State Market News
Nogales, Arizona
Telephone: (602) 281-0374
Phone-in Tape: (602) 281-0625
- for Mexican produce - tomatoes, peppers, cucumbers

ASPARAGUS

The production of B.C. asparagus has traditionally been centered in the Okanagan Valley. Wild asparagus is a long-time native and the species is well-suited to the climatic conditions there. Commercial production started in the early 1930's and has expanded to the present day acreages which cover some 800 acres. Although this has been mainly a dryland production system, an increasing number of growers are implementing irrigation systems because of the shorter time to full production and higher yields. Favourable market conditions are prompting increased expansion in an effort to compete with Washington and California in gaining a share of the B.C. market.

The processing market is seen as fairly stable and it supplies asparagus to the market over a longer time frame. The fresh market commands a higher price, however, and as such, is expanding. The last few years have also seen an increase in roadside sales due to the higher return.

Varieties

A number of varieties are currently in production including Mary Washington, Martha Washington, Viking, Limburgia, and Lucullus. These varieties are often used in the breeding programs of new varieties.

Nutrition

Asparagus has much to recommend it from a nutritional viewpoint since it is low in sodium and calories, containing about 40 calories in a spear and is rich in iron, thiamine, niacin, riboflavin and vitamin C.

Merchandising and Display

Fresh asparagus should be moved from the field and to the retail outlet as quickly as possible, allowing for sufficient cooling. It should be displayed in refrigerated cases and misted or sprayed since it desiccates quickly and loses freshness and flavor at room temperature. It can be displayed parallel to the length of the display rack to make it easier to pick up.

Uses

Asparagus is best steamed for 5 - 7 minutes, until tender but retaining its fresh green colour and then may be served hot or cold. It can be added to main dishes, served with a cheese or hollandaise sauce, made into soup or can be used in salads.

Storage Recommendations for Asparagus

Temperature: 32 F (0 C)
Relative Humidity: 90 - 95%

Asparagus should be cooled to 32 F (0 C) immediately after harvest to remove field heat and slow development. Hydrocooling or forced air cooling are used for this purpose but are not in wide practice in B.C. since the fresh product is moved to roadside markets very quickly. Asparagus should be held a low temperature at very high humidities if it is intended for only temporary storage (up to 10 days). If the storage period is to be longer then the temperature should be maintained at 34 - 36 F (2 - 3 C) to avoid chilling injury.

Temperatures above this promote growth and feathering and hasten the onset of woodiness or toughness as well as increase susceptibility to bacterial soft rot and fusarium and phytopthora rots. The use of controlled atmosphere storage is being used in some overseas shipments in the U.S. The butts are often placed in contact with a moisture source to minimize moisture loss from the stalk.

Grade Standards in Effect for Asparagus[2]

2. The grades for asparagus are Canada No. 1 and Canada No. 2.

Canada No. 1 Grade

3. Canada No. 1 is the grade name for asparagus that
(a) is fresh;
(b) is trimmed so that the butts of the stalks are smoothly and evenly cut and free from stringy or frayed ends;
(c) is free from specimens having tips that are broken, spreading or have a seedy appearance;
(d) is free from decay;
(e) is free from any injury or defect, or a combination thereof, other than an injury or defect referred to in paragraph (a), (b), (c) or (d), that materially affects the appearance, edibility or shipping quality of the asparagus;
(f) has not more than 15 percent of each stalk white;
(g) has stalks
    (i) of a minimum diameter of 5/16 inch and minimum length of 5 1/2 inches, and
    (ii) that do not, when in a package, vary more than 1 1/2 inches in length; and
(h) is properly packed.

Canada No. 2 Grade

4. Canada No. 2 is the grade name for asparagus that
(a) is free from decay;
(b) is free from any injury or defect, or a combination thereof, other than an injury or defect referred to in paragraph (a), that seriously affects the appearance, edibility or shipping quality of the asparagus;
(c) has not more than 15 percent of each stalk white; and
(d) is properly packed.

General Tolerances

5. Notwithstanding anything in these Regulations, in the grading of asparagus not more than
(a) 5 percent of the asparagus by count may be below the minimum size requirements;
(b) 10 percent of the packages, when the asparagus is in packages, may have stalks that are outside the permitted size range,
(c) 1 percent of the asparagus by count may be affected by decay,
(d) 5 percent of the asparagus by count may have the same grade defect, and
(e) 10 percent of the asparagus by count may have grade defects other than those referred to in paragraphs (a) and (b) but including those referred to in (c) and (d),
and still meet the grade standards for a grade.

Pack Sizes

Canadian:	20 lb. cartons
American:	pyramid crates - loose pack, 30 lbs. 1/2 pyramid crates - loose pack, 15-17 lbs. 1/2 pyramid cartons - six 2 1/4 lb. consumer bunches, 13 1/2 - 14 lbs. pyramid wirebound crates - 12 bunches, 20 lbs.

Estimated Number of Cases per Trailer Load

Asparagus - 1200 cases per trailer load.

Fresh Asparagus Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	Jan	Feb - Jun	Jul
Washington	Apr	May - Jun	Jul
B.C.	Apr	May - Jun	Jul
Chile		Oct	
New Zealand	Sep	Oct - Nov	Dec

Tariff Schedule

Canadian tariffs are usually applied to imported asparagus in or around the period of May 1 to June 26. When the harvest is well underway and sufficient volume is available, the Asparagus Growers Association informs the B.C. Vegetable Marketing Commission to make the tariff application. They then make a formal application to the Canadian Horticultural Council and if the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for a maximum of 8 weeks and should be cancelled as soon as local market volumes prove insufficient to supply the local markets in part. Current tariff rates on asparagus, n.o.p., are free B.P. (British Preferential) and 5.5 cents per pound but not less than 15 per cent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland: minor production
Vancouver Island: no production
Interior: (10 acres +)
  Field - C. & R. Cradock-Henry - Armstrong, 546-3462
    Covert Farms - Oliver, 498-2731
    J. Krebbers - Armstrong, 546-6804
    D. McCourt - Armstrong, 546-6253
    Merritt Farms - Vernon, 545-6330
    Sumac Farms - Okanagan Falls, 497-5100
  Processed - C. Glaicar - Armstrong, 546-6690
    L. Glaicar - Armstrong, 546-3269
    R. Glaicar - Armstrong, 546-9204
    J. Krebbers - Armstrong, 546-6804
    Merritt Farms - Vernon, 545-6330

GREEN AND WAX BEANS

The production of green and wax beans in B.C. is largely concentrated in the lower mainland near the processors to whom the major portion of the crop goes. The acreage has been gradually increasing since 1976 and yields an average of about 3.7 tons per acre. A bean producer committee negotiates contracts with the processors on behalf of the growers but the fresh market prices are based on landed California prices.

Beans are available through most of the year due to supply from competing areas of production.

Varieties

Several varieties are in current production including Bush Blue Lake 274, Provider, Executive and Contender, all of which are green varieties. Puregold is a yellow wax variety which is also grown.

Nutrition

Both green and wax beans are low in calories and in sodium and besides being a good source of Vitamin A, contain iron, thiamine and phosphorus in small amounts. They are also a good source of trace elements.

Merchandising and Display

Fresh beans can be displayed either in bulk or in packages or both. They should be displayed on a cool rack and require good air circulation. The use of contrasting colour displays attracts attention and innovative recipe suggestions are an incentive to buy.

Uses

Fresh beans can be sliced diagonally, slivered, cut French style or left whole. They can be boiled or steamed for 10 - 12 minutes until tender. Beans can be served plain, with butter or an Amandine sauce. Other uses include stir-frying for 5 - 8 minutes, using in hot salad, making green been chowder or pickling.

Storage Recommendations[1]

Temperature: 45-50 F (7.2-10 C)
Relative Humidity: 85-90%

Snap beans, if cooled immediately after harvest and held at 45 F (7.2 C), can be stored for 8-10 days. Contact icing of snap beans should be avoided. If held at temperatures of 40 F (4.4 C) or lower they are subject to chilling injury, evident as pitting in storage and russeting after removal from storage. Air circulation is important at all times. If the air becomes stagnant, moisture accumulates at the center of the mass, hastening the onset of decay and other damage. The main forms of decay occurring in snap beans that are held too long are watery soft rot, slimy soft rot, rhizopus rot, gray mold rot and anthracnose.

Grade Standards in Effect for Beans

There are no grade standards currently in effect for beans.

Pack Sizes

Canadian: 20 lb. cartons
American: bushel wirebound crates - 26-31 lbs.
bushel hampers - 26-31 lbs.
cartons (including semi-telescopic type) - 25-30 lbs.

Estimated Number of Cases per Trailer Load

Beans - These are not shipped in straight trailer loads.

Fresh Bean Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	Apr	May - Jul	Aug - Dec
Mexico	Dec	Jan - Apr	May
B.C.	Jul	Aug - Sep	Oct
Washington		Jul	Aug

Tariff Schedule

Canadian tariffs are usually applied to imported beans in or around the period of July 15 to October 21. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for 14 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on snap beans, n.o.p., are free B.P. (British Preferential) and 2 cents per pound, but not less than 10 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland: (25 acres +)
Field - minor production
Processed - Empress Foods Ltd. - Clearbrook, 534-7646
Franks Farms Ltd. - Chilliwack, 794-7150
Fraser Valley F.F. - Chilliwack, 795-7281
Fraserland Farms Ltd. - Delta, 946-2797
Grove Crest Farms (78) Ltd. - Delta, 946-4279
J. Hougen - Abbotsford, 859-8280
Quality Investments Ltd. - Aldergrove, 856-8522
H.S. Rai Farms Ltd. - Aldergrove, 534-3831
Sandhu Farms Ltd. - Abbotsford, 853-8755
H.R. Savage & Sons - Delta, 946-6448
Seabird-Wigand - Agassiz, 796-2457
Sumas River Growers Ltd. - Abbotsford, 859-7089
Townline Growers Ltd. - Abbotsford, 859-5907
Vancouver Island: minor production
Interior: minor production

BEETS

Beet production (topped and bunched) occurs throughout the province in varying amounts with the majority centered in the Lower Mainland. Topped beets are a regulated commodity under the B.C. Vegetable Marketing Commission, and as such they are marketed through the Commission's appointed selling agencies. Beets are available throughout the year due to both imports from other areas of supply and the extended storageability of beets.

Bunched beets are regarded as a premium product and usually receive a higher fresh market price than do topped beets but their storageability is not as long. Bunched beets are not regulated and sales are usually through Lower Mainland Farmer's Co-op, roadside stands or are grower to wholesaler direct.

Varieties

A number of varieties are currently in production including Red Ace, Ruby Queen, King Red, Perfect Detroit and Dark Red.

Nutrition

Raw beets are a good source of Vitamins A and C but care must be taken in cooking to avoid their loss. In addition, beet tops are an excellent source of Vitamin A and a good source of Vitamin C and iron.

Merchandising and Display

Fresh beets should be displayed at temperatures of 50 F (10 C) or lower and should be sprinkled lightly to prevent moisture loss. This is especially true for bunched beets because otherwise their tops will wilt and will be unappealing to the consumer. Displays which use colour contrast of the beets and their tops are especially effective.

Uses

Beets can be eaten in many ways including boiled, pickled, baked, fried and in soup. Boiling beets in their skins is the easiest method of removing the skins which then slip off.

Storage Recommendations for Beets[1]

Temperature: 32 F (0 C)
Relative Humidity: 90-95%

Beets are sold either with tops on or with tops removed. The former style is referred to as 'bunch beets' and is primarily for the retail trade. The latter is referred to as 'topped beets' and is used for processing and, to some extent, for the retail trade. Bunch beets are often harvested before they reach full maturity (about 1 1/2 - 3 inches in diameter). They are not held in storage for long periods although they can be held for 10 days to 2 weeks at 32 F (0 C) at a high relative humidity. Wilting and other damage to the tops can be lessened if beets are not crowded in storage. Sometimes the tops are lightly trimmed so that they do not look wilted. Icing before transportation to market helps maintain a fresh appearance and longer shelf life.

Topped beets are more mature, and are harvested in the fall before danger of freezing. Loose soil is removed and the beets are topped by cutting close to the crown. All damaged and misshapen beets should be discarded. Irregular or coarse roots are likely to be tough and woody; damaged beets are likely to shrivel or be a source of infection in storage. Because beets have a strong tendency to shrivel, a high relative humidity should be maintained during storage. Under these conditions, and at 32 F (0 C), beets may be held for 1-3 months. Root cellars and refrigerated storages are both satisfactory, and storage in ventilated barrels or slatted boxes is preferable to bulk storage.

Grade Standards in Effect for Beets[2]

6. The grades for beets are Canada No. 1 and Canada No. 2.

Canada No. 1 Grade

7. Canada No. 1 is the grade name for beets that
(a) have similar varietal characteristics;
(b) are not soft, flabby, shrivelled or woody in texture;
(c) are not trimmed into the shoulder but are so trimmed that the length or the tops of 75 percent of the beets does not exceed 1/2 inch and the length of the tops of the other beets does not exceed 1 inch;
(d) are not tough, ridged or misshapen;
(e) have the shape characteristic of the variety;
(f) are reasonably clean;
(g) are free from decay;
(h) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (g) that
  (i) materially affects the appearance, edibility or shipping quality of the beets, or
  (ii) cannot be removed without a loss of more than 5 percent of the total weight of a beet;
(i) have
  (i) a minimum diameter of 1 1/4 inches and maximum diameter of 3 inches, or
  (ii) a minimum diameter of 1 inch and
    (A) conform to a size range marked on the package in which they are packed or on a tag attached thereto,
    (B) are packed in a transparent package, or
    (C) are in a bulk display in a retail store; and
(j) are properly packed.

Canada No. 2 Grade

8. Canada No. 2 is the grade name for beets that
(a) have similar varietal characteristics;
(b) are not soft, flabby, shrivelled or woody in texture;
(c) are trimmed so that the tops do not exceed 1 inch in length but are not trimmed into the shoulder;
(d) are not deformed to the extent that the appearance of the beet is seriously affected;
(e) are free from decay;
(f) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (e) that
  (i) seriously affects the appearance, edibility or shipping quality of the beets, or
  (ii) cannot be removed without a loss of more than 10 percent of the total weight of a beet;

(g) have
    (i) a minimum diameter of 1 1/4 inches or
    (ii) a minimum diameter of 1 inch and
        (A) conform to a size range marked on the package in which they are packed or on a tag attached thereto,
        (B) are packed in a transparent package, or
        (C) are in a bulk display in a retail store.

General Tolerances

9. Notwithstanding anything in these Regulations, in the grading of beets not more than
(a) 4 percent of the beets by weight may be below the prescribed or designated minimum size,
(b) 8 percent of the beets by weight may exceed the prescribed or designated maximum size,
(c) 2 percent of the beets by weight may be affected by decay, and
(d) 6 percent of the beets by weight may have grade defects other than those referred to in paragraphs (a) and (b) but including those referred to in paragraph (c),
and still meet the grade standards for a grade.

Pack Sizes

Topped Beets: Canadian - medium 50 lbs. - poly
                         carton - 2 dozen bunches
              American - 1/2 crates - 2 dozen bunches, 36-40 lbs.
                         4/5 crates - 1 dozen bunches, 20 lbs.
Bunch Beets: Canadian - carton - 2 dozen bunches
              American - 1/2 crates - 2 dozen bunches

Estimated Number of Cases per Trailer Load

Beets - These are not shipped in straight loads.

Fresh Beet (topped) Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.	Jul	Aug - Sep	Oct - Apr
Texas	Jan	Feb - May	Jun
California	Feb	Mar - Jun	Jul

Fresh Beet (bunched) Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.	Jul	Aug - Sep	Oct
Texas	Jan	Feb - May	Jun
California	Feb	Mar - Jun	Jul

Tariff Schedule

Canadian tariffs are usually applied to imported beets, n.o.p. in or around the period of July 15 to March 10. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for 34 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on beets, n.o.p., are free B.P. (British Preferential) 1 cent per pound but not less than 10 percent ad valorum M.F.N. ((Most Favoured Nation).

Principal Suppliers (Topped Beets) in B.C. by Area

Lower Mainland:
B.C. Coast Vegetable Co-operative Association
13631 Vulcan Way
Richmond, B.C.
Phone: 278-6234

Vancouver Island:
Island Vegetable Co-operative Association
2805 Quesnel
Victoria, B.C.
Phone: 382-8203

Nanaimo Branch
6451 Portsmouth Road
Lantzville, B.C.
Phone: 390-2312

Interior:
Interior Vegetable Marketing Agency Ltd.
2908-31st Avenue
Vernon, B.C.
Phone: 545-5100
545-0694

Principal Suppliers (Bunched Beets) in B.C. by Area

Lower Mainland:
B.C. Lower Mainland Farmer's Co-operative
272 East Pender
Vancouver, B.C.
Phone: 683-7024

BROCCOLI

The production of B.C. broccoli is largely concentrated in the Lower Mainland with some production in the other areas of the province. About 70 percent of the broccoli produced in the Lower Mainland is processed and the remaining provincial production is consumed as fresh.

Market growth for broccoli has been good in the past and a number of new growers have entered into production over the last few years.

The Cole Crop Growers Association has been negotiating contracts with the processors on behalf of the growers since 1981. Prior to that time, contracts were negotiated independently.

Varieties

Varieties of broccoli which are in current production include Emperor, SG1, Premium Crop, Southern Comet and Cornet. These are all Italian or Sprouting varieties.

Nutrition

Broccoli is a popular vegetable raw or cooked and is a good source of Vitamin A, iron and other minerals and is an excellent source of Vitamin C. It also contains very few calories.

Merchandising and Display

Broccoli should be displayed on a refrigerated tray and should be iced or sprinkled. Bunches are usually banded together and this not only makes it more convenient for the consumer but helps save handling damage and keeps the broccoli in better condition. Bunches can be placed either butt end down or on their side, not more than one or two layers deep.

Uses

Broccoli can be used in a variety of ways including raw, on a vegetable platter with dip or in a salad, boiled or steamed for 5 - 7 minutes, with a lemon and butter sauce, Hollandaise or a cheese sauce, or made into soup.

Storage Recommendations for Broccoli (Italian or Sprouting)

Temperature: 32 F (0 C)
Relative Humidity: 90-95%

Broccoli should be cooled to 32 F (0 C) immediately after harvest to remove field heat and slow development. Hydrocooling or forced air cooling can be used for this purpose and liquid and top-icing are often used. Broccoli can be held for 10 - 14 days under optimal storage conditions of cold temperatures, high humidity and good ventilation.

Grade Standards in Effect for Broccoli

There are no grade standards currently in effect for broccoli.

Pack Sizes

Canadian: wax treated cartons - 14 bunches, 23 - 25 lbs.
American: wax treated cartons - 14 bunches, 23 - 25 lbs.

Estimated Number of Cases per Trailer Load

Broccoli - 950-1000 cases per trailer load.

Fresh Broccoli Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California		Jan - Dec	
B.C.	Jun	Jul - Nov	Dec

Tariff Schedule

Canadian tariffs are usually applied to imported broccoli, n.o.p. in or around the period of July 15 to November 4. When the harvest is well underway and sufficient volume is available, the Cole Crop Growers Association asks the B.C. Vegetable Marketing Commission to make the tariff application. They then make a formal application to the Canadian Horticultural Council and if the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for 16 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on broccoli, n.o.p., are free B.C. (British Preferential) and 2.5 cents per pound but not less than 15 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland: (25 acres +)
  Field - minor production
  Processed - Alamwala Growers - Abbotsford, 853-0392
    Basi Brothers Farms - Delta, 591-6726
    Dashmesh Farming - Surrey, 581-1145
    Grewal & Dhaliwal Farms - Abbotsford, 859-1772
    Horsting Farms Ltd. - Abbotsford, 826-1813
    Kapoor & Sons Farm - Abbotsford, 859-2055
    Kondolay Bros. Farms Ltd. - Clearbrook, 853-9022
    G.S. Kondolay - Mt. Lehman, 856-7555
    Lally Farms - Matsqui, 859-6820
    P & B Growers Ltd. - Mt. Lehman, 856-2035
    Rai & Kallu Farms - Delta, 943-6511
    H.S. Rai Farms Ltd. - Aldergrove, 534-3831
    Sandhu Farms Ltd. - Abbotsford, 853-8755
    Sandhu Fruit Farms - Vancouver, 433-8995
    Shoker Farms - Yarrow, 823-6681
    Telescope Trucking Ltd. - Abbotsford, 853-1461
Vancouver Island: minor production
Interior: minor production

BRUSSELS SPROUTS

Limited market potential exists for Brussels sprouts. At present, production is concentrated in the Lower Mainland, close to the processors. A large proportion of the production is processed but a slowly increasing amount is sold fresh. Of this, direct sales to wholesalers are remaining fairly steady while the roadside stand sales are increasing.

The Cole Crop Growers Association has been negotiating contracts with the processors on behalf of the growers since 1981. Prior to that time, contracts were negotiated independently.

Brussels sprouts are available through much of the year since California is a major alternative source of supply.

Varieties

Varieties which are currently in production include Craton, Lancelot, Lunet and Fortress.

Nutrition

Raw Brussels sprouts are rich in Vitamin C and thiamine and are a good source of iron. Care must be taken in preparation, however, since prolonged boiling destroys Vitamin C. Brussels sprouts are also valued for their low caloric content.

Merchandising and Display

Brussels sprouts are a highly perishable commodity so should be displayed under refrigeration and should be sprinkled or iced.

Uses

Brussels sprouts may be served in a variety of ways including boiled or steamed, baked, french-fried and can be used in casseroles, salads and souffles or with any number of sauces. They should be boiled or steamed until just tender, retaining a fresh green colour.

Storage Recommendations for Brussels Sprouts

Temperature: 32 F (0 C)
Relative Humidity: 90-95%

Brussels sprouts should be cooled immediately after harvest to remove the field heat and prevent yellowing, loss of moisture and development of disease. Either icing or hydrocooling is effective because both also reduce wilting. Brussels sprouts are not stored for very long periods but will keep for 3-4 weeks at low temperatures and high humidity.

Grade Standards in Effect for Brussels Sprouts[2]

10. The grades for Brussels sprouts are Canada No. 1 and Canada No. 2.

Canada No. 1 Grade

11. Canada No. 1 is the grade name for Brussels sprouts that
(a) have been removed from the stalk;
(b) are not withered or burst and yield only slightly to moderate pressure;
(c) are of a green colour characteristic of well grown Brussels sprouts;
(d) do not plainly show the formation of a seed stalk;
(e) have a minimum diameter of 1 inch and a maximum diameter of 2 inches;
(f) have a maximum length of 2 3/4 inches;
(g) are free from decay; and
(h) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (g) that materially affects their appearance, edibility or shipping quality.

Canada No. 2 Grade

12. Canada No. 2 is the grade name for Brussels sprouts that
(a) have been removed from the stalk;
(b) are not withered, burst, soft or puffy;
(c) are of reasonable weight for their size but may have considerable open spaces between the leaves in the lower portion of the head;
(d) are of a colour not lighter than yellowish-green;
(e) do not plainly show the formation of a seed stalk;
(f) have a minimum diameter of 1 inch;
(g) have a maximum length of 2 3/4 inches;
(h) are free from decay;
(i) are free from insect injury that materially affects their appearance, edibility or shipping quality; and
(j) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (i), that seriously affects the appearance, edibility or shipping quality of the Brussels sprouts.

General Tolerances

13. Notwithstanding anything in these Regulations, in the grading of brussels sprouts not more than
(a) 5 percent of the Brussels sprouts by weight may be below the minimum diameter,
(b) 5 percent of the Brussels sprouts by weight may exceed the maximum diameter,
(c) 10 percent of the Brussels sprouts by weight may exceed the maximum length,
(d) 2 percent of the Brussels sprouts by weight may be affected by decay;
(e) 5 percent of the Brussels sprouts by weight may have the same grade defect,
(f) 10 percent of the Brussels sprouts by weight may have grade defects other than those referred to in paragraphs (a), (b) and (c) but including those referred to in paragraphs (d) and (e),
and still meet the grade standards for a grade.

Pack Sizes

Canadian:	carton -	loose pack, 25 lbs.
American:	carton -	wax-treated, loose pack, 25 lbs.
	carton -	holding 12, 10 or 12 oz. film wrapped cups or trays, 8 1/4-10 lbs.

Estimated Number of Cases per Trailer Load

Brussels sprouts - 1300-1350 cases per trailer load.

Fresh Brussels Sprouts Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	Aug	Sep - May	Jun
B.C.	Sep	Oct - Nov	Dec

Tariff Schedule

Canadian tariffs are usually applied to imported Brussels sprouts in or around the period of October 1 to February 18. When the harvest is well underway and sufficient volume is available, the Cole Crop Growers Association asks the B.C. Vegetable Marketing Commission to make the tariff application. They then make a formal application to the Canadian Horticultural Council and if the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for a maximum of 20 weeks and should be cancelled as soon as local market volumes prove insufficient to supply the local markets in part. Current tariff rates on Brussels sprouts are free B.P. (British Preferential) and 3 cents per pound but not less than 12.5 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland: (25 acres +)
  Field - minor production
  Processed - Bathe Farms Ltd. - Abbotsford, 853-3435
    Driediger Bros. Farms Ltd. - Aldergrove, 888-3065
    Grewal & Dhaliwal Farms - Abbotsford, 859-1772
    Horsting Farms Ltd. - Abbotsford, 826-1813
    Lally Farms - Matsqui, 859-6820
    Milner Farms - Langley, 888-0246
    P & B Growers Ltd., Mt. Lehman, 856-2035
    Rai & Kallu Farms - Delta, 943-6511
    H.S. Rai Farms Ltd. - Aldergrove, 534-3831
    Saboka Farms - Aldergrove, 856-1834
    Sandhu Farms Ltd. - Abbotsford, 853-8755
    Sandhu Fruit Farms - Vancouver, 433-8995
    South Alder Farms Ltd. - Aldergrove, 856-5661
    Townline Growers Ltd. - Abbotsford, 859-5907
Vancouver Island: minor production
Interior: no production

CABBAGE

Cabbage production occurs in all three districts of the province with the majority concentrated in the Lower Mainland. In recent years production levels have been fairly stable. Cabbage is a regulated commodity under the jurisdiction of the B.C. Vegetable Marketing Commission and as such, fresh market sales are solely through the B.C. Coast Vegetable Co-operative, the Island Vegetable Co-operative and the Interior Vegetable Marketing Agency. Roadside sales account for a small percentage of sales in each district.

Varieties

A number of varieties are in current production including Early Wonder No. 1, Early Marvel, Stonehead, Market Topper, Houston Evergreen, Late Flat Dutch and Red Acre.

Nutrition

Cabbage is rich in Vitamin C but care must be taken in preparation to conserve it since it can be lost through prolonged cooking. Cabbage also contains iron, thiamine and is a good source of roughage besides being low in calories.

Merchandising and Display

Cabbage should be sprinkled or iced to maintain its freshness. Bulk displays which use the colour contrast of the different types are effective.

Uses

Cabbage can be boiled, baked or used raw in salads. It can also be processed into sauerkraut, added to soup and casseroles or made into cabbage rolls. In addition, the red varieties can be pickled.

Storage Recommendations for Cabbage

Temperature: 32 F (0 C)
Relative Humidity: 90-95%

Early cabbage, which is normally harvested during the summer, before the crop reaches full maturity, has a storage life of 3-4 weeks at 32 F (0 C) and high relative humidity. Because this crop is usually grown for immediate sale, there is no great economic advantage in holding it for long periods in storage.

Late cabbage, or the solid Danish Ballhead type has a storage life of 3-4 months if held at 32 F (0 C) at a high relative humidity. Although high humidities are required to prevent wilting, good air circulation is also necessary to prevent excessive dampness within the pile. The late cabbage crop is harvested in the fall when it is fully mature, as shown by solid, heavy heads and a heavy waxy bloom on all the leaves, which gives them a steel-blue colour. After harvest, the roots are trimmed fairly close to the base of the heads. Dead or damaged leaves are removed. At least one layer of healthy outer leaves should be retained to protect each head during handling and storage. Further trimming is usually needed when heads are removed from storage before marketing. The best storage is attained with shallow layers on top of slatted shelves but the heads can also be stored by piling to a depth of not over 5 feet (1.5 m) if ample aeration, often by forced air, is provided within the pile or stack.

Freezing should be avoided but cabbage will recover from light freezing. The main disorders occurring in storage are caused by wilting, and by infections of Rhizopus and other fungi. Cabbage appears to be adapted to CA storage in 5 percent carbon dioxide and 2.5 percent oxygen at 32 F (0 C). This treatment is effective in preserving green colour, maintaining succulence and greatly retarding senescence.

Grade Standards in Effect for Cabbage[2]

14. The grades for cabbages are Canada No. 1 and Canada No. 2.

Canada No. 1 Grade

15. Canada No. 1 is the grade name for cabbages that
(a) have similar varietal characteristics;
(b) have, in the case of other than savoy type, heads that yield only slightly to pressure;
(c) have, in the case of savoy type, heads that are not soft;
(d) are trimmed so that the butts are not longer than 1/2 of an inch that all outer leaves injured by worms, disease or other means are removed and there are not more than 6 wrapper leaves per head;
(e) are free from heads that are withered or burst;
(f) are free from heads that plainly show the formation of the seed stalk;
(g) are free from decay;
(h) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (g), that materially affects their appearance, edibility or shipping quality;
(i) do not, when in a package, vary more than 2 inches in diameter; and
(j) are properly packed.

Canada No. 2 Grade

16. Canada No. 2 is the grade name for cabbages that
(a) have similar varietal characteristics;
(b) are trimmed so that the stems are not longer than 1/2 of an inch and there are not more than 6 wrapper leaves per head;
(c) are free from heads that are soft, withered or burst;
(d) are free from heads that plainly show the formation of the seed stalk
(e) are free from decay;
(f) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (e), that
    (i) seriously affects their appearance, edibility or shipping quality, or
    (ii) cannot be removed without the loss of more than 15 percent of the edible portion of a head; and
(g) are properly packed.

General Tolerances

17. Notwithstanding anything in these Regulations, in the grading of cabbages not more than
(a) 10 percent of the packages, where the cabbages are in packages, may contain heads that exceed the permitted size variation;
(b) 2 percent of the cabbages by count may be affected by decay;
(c) 5 percent of the cabbages by count may have the same grade defect; and
(d) 10 percent of the cabbages by count may have grade defects other than as referred to in paragraph (a) but including those referred to in paragraphs (b) and (c);
and still meet the grade standards for a grade.

Pack Sizes

Canadian: green - 50 lb. cartons
red - 50 lb. cartons
savoy - 40 lb. or 50 lb. cartons
American: flat crates - 1 3/4 bushel, 50-60 lbs.
cartons - place pack, 53 lbs.
sacks - mesh, 50 lbs.

Estimated Number of Cases per Trailer Load

Cabbage - 750-800 cases per trailer load.

Fresh Cabbage (green) Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.	Jun	Jul - Jan	Feb - Mar
California		Jan - Jun	Jul - Dec
Texas	Dec	Feb - Mar	Apr - Jun

Fresh Cabbage (red) Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.	Jul	Aug - Jan	Feb
California	Dec	Jan - Jun	Jul - Sep

Fresh Cabbage (savoy) Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.	Jul	Aug - Nov	Dec
California	Dec	Jan - Jun	Jul - Sep

Tariff Schedule

Canadian tariffs are usually applied to imported cabbages, n.o.p., in or around the period of July 1 to February 24. When the harvest is well underway and sufficient volume is available, the Cole Crop Growers Association asks the B.C. Vegetable Marketing Commission to make the tariff application. They then make a formal application to the Canadian Horticultural Council and if the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for a maximum of 34 weeks and should be cancelled as soon as local market volumes prove insufficient to supply the local markets in part. Current tariff rates on cabbages, n.o.p., are free (B.P. (British Preferential) and 1.25 cents per pound but not less that 15 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland:
B.C. Coast Vegetable Co-operative Association
13631 Vulcan Way
Richmond, B.C.
Phone: 278-6234

Vancouver Island:
Island Vegetable Co-operative Association
2805 Quesnel
Victoria, B.C.
Phone: 382-8203

Nanaimo Branch
6451 Portsmouth Road
Lantzville, B.C.
Phone: 390-2312

Interior:
Interior Vegetable Marketing Agency Ltd.
2908-31st Avenue
Vernon, B.C.
Phone: 545-5100
545-0694

CARROTS

Carrot production has remained fairly stable with slightly more than half the total production in the Lower Mainland and most of the remaining production on Vancouver Island. Carrots are mainly sold on the fresh market and the B.C. Vegetable Marketing Commission regulates the sales of topped but not of bunched carrots. Topped carrots are sold through the B.C. Coast Co-operative, the Island Vegetable Co-operative and the Interior Vegetable Marketing Agency. Bunched carrots are handled by the Lower Mainland Farmer's Co-operative.

Varieties

Several varieties are in current production including Super Nantes, Hipak, Paramount and Six Pak, all of which are for the fresh market. Grace, Indu, Danvers 126 and Royal Chantenay are grown for the processing market.

Nutrition

Carrots are an excellent supply of Vitamin A and contain moderate amounts of other valuable nutrients as well. Carrots are also low in calories and their nutrient value is unaffected by storage.

Merchandising and Display

Fresh carrots should be displayed on refrigerated racks and those not in packages should be sprinkled lightly. Bulked carrots should not be placed too high and bunched carrots should be placed with their tops in one direction to take advantage of the colour contrast. Bagged carrots should all be placed in the same direction so the labels can be easily read.

Uses

Raw carrots can be used as a low calorie snack, alone or with a dip. They can be added to salads or pickled or juiced. Carrots can be boiled or steamed for a few minutes so that they are still quite firm or they can be diced and creamed, baked, fried or sauteed. Carrots are a popular addition to stews and can be added to soup.

Storage Recommendations for Carrots[1]

Temperature: 32 F (0 C)
Relative Humidity: 95%

For long storage, carrots are harvested when mature and after the leaves have assumed a slightly browned appearance. Harvesting in cool, cloudy weather to prevent drying of the roots from the time they are dug until they are placed in storage, and maintaining the relative humidity in storage at 85 percent or higher, will reduce the browning disorders that often occur. During harvest, carrots are topped to retain the crown or top of the root, and objectionable roots are discarded. Coarse, damaged, distorted roots and the crease in the crown form focal points for subsequent decay.

Properly matured carrots can be stored up to 10 feet (3 m) deep in bins if aeration, preferably by forced air, is provided. It is customary, however, to store carrots in bulk bins, ventilated barrels, or slatted crates. Most varieties may be held 4-5 months at 32 F (0 C). The longer storing varieties include Chantenay, Danvers, Gold Pack, Imperator and Nantes.

Such varieties as Touchon have a slightly shorter life of about 3-4 months. Adequate air movement helps to prevent bitter flavours caused by ethylene. Also, ethylene-producing fruits such as apples and pears should not be stored in the same area as carrots. High humidity is required to prevent shrivelling or wilting and on a small scale, carrots can be stored in damp moss, coarse sawdust, layers of newspaper, sand or other materials that will control moisture loss.

More tender, immature carrots are harvested at less than 1 1/2 inches (3.8 cm) in diameter for immediate consumption or short storage. They are sometimes sold as bunched carrots with tops retained, but the tops may remove moisture rapidly from the roots and they are prone to discolouration by yellowing. Therefore, even immature carrots are usually sold with tops removed. They may be packed in transparent film packages for the retail market or in crates for long-distance shipment. They should be hydrocooled to 40-45 F (4.4-7.2 C) or lower soon after harvest and before packing for shipment. If shipped open in crates they can be top-iced to retain their freshness. The storage life of young carrots varies from several days to 2 weeks, depending on their age and storage conditions.

Carrots in storage may be damaged by severe freezing, although they will recover from a light frost. They may also become shrivelled through loss of moisture. Water soft rot or bacterial soft rot may be prevalent toward the end of storage life. Discarding damaged or coarse roots at harvest helps control these disorders, as do ventilation and frequent inspection during the storage period.

Grade Standards in Effect for Fresh and Processed Carrots[2]

18. The grades for carrots are Canada No. 1, Canada No. 1 - Cut Crowns and Canada No. 2.

Canada No. 1 Grade

19. (1) Canada No. 1 is the grade name for carrots that
(a) have similar varietal characteristics;
(b) are not woody in texture, forked, soft, flabby or shrivelled;
(c) are not trimmed into the crown but are so trimmed that the length of the tops of 75 percent of the carrots does not exceed 1/2 of an inch and the length of the tops of the other carrots does not exceed 1 inch;
(d) are not rough, forked or misshapen and not materially affected by secondary rootlets;
(e) are reasonably clean;
(f) are free from sunburn that
(i) extends more than 1/2 of an inch below the outer edge of the crown, or (ii) affects more than 10 percent of the carrots in the lot, provided that sunburn affecting only the crown and not extending downward from the outer edge of the crown will not be considered;
(g) are free from decay;
(h) are free from damage;
(i) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (h) that
(i) materially affects their appearance, edibility or shipping quality, or
(ii) cannot be removed without a loss of more than 5 percent of the total weight of a carrot;

(j) have minimum length of 4 1/2 inches;
(k) have minimum and maximum diameter as set out in subsection (3); and
(l) are properly packed.

(2) In this section, "free from damage" means that the carrots are free from
(a) crown damage by mechanical injury that
    (i) exceeds 1/2 inch in depth,
    (ii) has become noticeably discoloured, or
    (iii) affects an aggregate area exceeding 2/3 of the diameter of the carrot;
(b) broken carrots
    (i) that do not conform to the general shape of a carrot,
    (ii) that are less than 6 inches in length and have a tip diameter greater than 1/2 the diameter of the carrot, or
    (iii) the cut or break of which is rough or jagged;
(c) fresh cracks that
    (i) are not clean,
    (ii) are over 1/8 inch in width,
    (iii) are over 1/4 inch in depth, or
    (iv) exceed 1/3 of the length of the carrot.

(3) Canada No. 1 grade carrots shall have
(a) a minimum and maximum diameter as specified on the package if packed in packages on which the minimum and maximum diameter is marked, but in no case shall the minimum diameter so marked be less than 3/4 inch;
(b) a minimum diameter of 1 1/2 inches or greater if packed in a package marked with the words "1 1/2 inches and up" or as the case may be;
(c) a minimum diameter of 3/4 inch if packed in a transparent package or if in a bulk display in a retail store; and
(d) a minimum diameter of 1 inch and maximum diameter of 1 3/4 inches in all cases not referred to in paragraphs (a) to (c).

Canada No. 1 - Cut Crowns Grade

20. Canada No. 1 - Cut Crowns is the grade name for carrots that have had their crowns or shoulders removed but which in all other respects meet the requirements of Canada No. 1 grade.

Canada No. 2 Grade

21. Canada No. 2 is the grade name for carrots that
(a) are of the same general type;
(b) are not soft, flabby, shrivelled or woody in texture;
(c) are trimmed so that the tops do not exceed 1 inch in length but are not trimmed into the crown;
(d) are not forked or deformed to the extent that the appearance of the carrots is seriously affected;
(e) are free from sunburn that extends more than 1 inch below the other edge of the crown;
(f) are free from decay;
(g) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (f) that
    (i) seriously affects the appearance, edibility or shipping quality of the carrots, or

(ii) cannot be removed without a loss of more than 10 percent of the total weight of a carrot;
(h) have a minimum diameter of 3/4 inch and a minimum length of 4 1/2 inches; and
(i) are properly packed.

Washed Carrots

22. The word "washed" may be used in connection with any of the grades of carrots if prior to being packed the carrots have been washed.

General Tolerances

23. Notwithstanding anything in these Regulations, in the grading of carrots not more than
(a) 4 percent of the carrots by weight may be below the prescribed or designated minimum size,
(b) 8 percent of the carrots by weight may exceed the prescribed or designated maximum size,
(c) 5 percent of the carrots by weight may be affected by decay,
(d) 5 percent of the carrots by weight may have the same grade defects including those referred to in paragraphs (a), (b), (c) and (d),
and still meet the grade standards for a grade.

Pack Sizes

Canadian:	topped -	cello, 24 x 2 lb.
		sack, 50 lbs.
	bunched -	case, 24's
American:	topped -	cello, 24 x 2 lb.
		cello, 10 x 5 lb.
		case, 50 lbs.
		case, 65 lbs.
	bunched -	case, 24's

Estimated Number of Cases per Trailer Load

Carrots - 850 cases per trailer load.

Fresh Carrot (topped) Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	Oct	Nov - Aug	Sep
B.C.	Jun	Jul - Nov	Dec - Feb

Fresh Carrot (bunched) Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	Nov	Dec - Aug	Sep
B.C.	Jun	Jul - Oct	Nov

Tariff Schedule

Canadian tariffs are usually applied to imported carrots n.o.p. in or around the period of July 10 to March 31. When the harvest is well underway and sufficient volume is available, the B.C. Vegetable Marketing Commission makes a formal application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for a maximum of 20 weeks and should be cancelled as soon as local market volumes prove insufficient to supply the local markets in part. Current tariff rates on carrots, n.o.p., are free B.P. (British Preferential), 0.5 cents per pound M.F.N. (Most Favoured Nation) and 1 cent per pound General tariff.

Principal Suppliers in B.C. by Area

Lower Mainland:
B.C. Coast Vegetable Co-operative Association
13631 Vulcan Way
Richmond, B.C.
Phone: 278-6234

Vancouver Island:
Island Vegetable Co-operative Association
2805 Quesnel
Victoria, B.C.
Phone: 382-8203

Nanaimo Branch
6451 Portsmouth Road
Lantzville, B.C.
Phone: 390-2312

Port Potato Company
Bamfield Road
Cox Lake, B.C.
Phone: 723-7000

Interior:
Interior Vegetable Marketing Agency Ltd.
2908 - 31st Avenue
Vernon, B.C.
Phone: 545-5100
545-0694

CAULIFLOWER

Cauliflower production is centered in the lower mainland where the majority of processing facilities are located. Cauliflower production is relatively stable and sales are split fairly evenly between the fresh and the processing markets. Production of cauliflower is regulated by the B.C. Vegetable Marketing Commission and as such, fresh market sales are through the Cloverdale Lettuce and Vegetable Co-operative and the Island Vegetable Co-operative. These agencies handle the packing, grading and selling of cauliflower. Processing contracts are negotiated by the B.C. Cole Crop Producer's Association on behalf of the growers.

Varieties

Varieties of cauliflowers which are in commercial production in B.C. include Celesta, Elgon, Silverstar and Snowball 123.

Nutrition

Cauliflower is very low in calories and is a good source of Vitamin C and other essential vitamins and minerals.

Merchandising and Display

Cauliflower should be displayed on refrigerated trays and handled gently since it bruises easily. If the temperature is above 50 F (10 C) it should be sprinkled lightly. Browning of the curds can be avoided by promoting a rapid turnover and small, loose curds can be sold in packages or in bulk as hors d'ouevres to lessen waste.

Uses

Cauliflower can be boiled or steamed for 10 - 15 minutes until tender but not crumbly or mushy. Adding one teaspoon of lemon juice helps to maintain the white colour. Cauliflower can also be creamed, marinated, sauteed, fried, pickled or eaten raw with or without a vegetable dip. Cheese sauces as well as Hollandaise and Milanaise sauces are very nice on cauliflower.

Storage Recommendations for Cauliflower

Temperature: 32 F (0 C)
Relative Humidity: 90-95%

Cauliflower should be cooled to 32 F (0 C) immediately after harvest to remove field heat and slow development. Vacuum cooling or hydrocooling are used for this purpose. Cauliflower is not usually held in storage for very long but is moved to the market within a short space of time. When it is kept in storage, low temperatures and a high humidity should be maintained to prolong its storage life.

Grade Standards in Effect for Fresh and Processed (frozen) Cauliflower[2]

24. The grades for cauliflowers are Canada No. 1 and Canada No. 2.

Canada No. 1 Grade

25. (1) Canada No. 1 is the grade name for cauliflowers that
(a) have compact heads;
(b) have wrapper leaves that are fresh and green and not damaged or unsightly;
(c) have had superfluous leaves removed but the heads of which are, unless individually wrapped, protected by a ring of wrapper leaves;
(d) are free from heads of abnormal colour or of a loose or granular appearance commonly known as "riciness";
(e) are free from decay;
(f) are free from damage;
(g) have a minimum head diameter of 4 inches;
(h) do not, when in a package, vary more than 2 inches in diameter; and
(i) are properly packed.

(2) In this section, "free from damage" means that the cauliflowers are free from
(a) overmature heads that are loose, open or turning yellow;
(b) any injury or defect, or a combination thereof, other than as referred to in paragraphs (a), (c) and (d) that materially affects the appearance, edibility or shipping quality of the heads or that seriously affects the wrapper leaves;
and in the case of an individual cauliflower, means that the cauliflower is free from
(c) enlarged bracts that have grown up through and extended beyond the curd and materially affect the appearance of the head; and
(d) stems of the individual flower buds that have begun to elongate resulting in the surface of the head having a fuzzy appearance.

Canada No. 2 Grade

26. Canada No. 2 is the grade name for cauliflowers that
(a) have fairly compact heads;
(b) are free from heads of abnormal colour;
(c) are free from decay;
(d) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (a), (b) and (c), that
    (i) seriously affects their appearance, edibility or shipping quality, or
    (ii) cannot be removed without altering the shape of a head; and
(e) are properly packed.

General Tolerances

27. Notwithstanding anything in these Regulations, in the grading of cauliflowers not more than
(a) 5 percent of the cauliflowers by count may be below the minimum size;
(b) 10 percent of the packages, where the cauliflowers are in packages, may contain fewer or more heads than the number marked thereon or contain heads that exceed the permitted size variation;

(c) 2 percent of the cauliflowers by count may be affected by decay;
(d) 5 percent of the cauliflowers by count may have the same grade defect; and
(e) 10 percent of the cauliflowers by count may have grade defects other than those referred to in paragraphs (a) and (b) but including those referred to in paragraphs (c) and (d)
and still meet the grade standards for a grade.

Pack Sizes

Canadian: cartons - cello wrapped, 9's, 12's, 16's, 20's
naked, 9's, 16's
American: cartons - cello wrapped, 9's, 12's, 16's, 20's

Estimated Number of Cases per Trailer Load

Cauliflower - 1400-1600 cases per trailer load.

Fresh Cauliflower Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	New Crop	Active Supply	Shipping Decreases
California	Oct	Nov - Jul	Aug - Sep
B.C.	Jun	Jul - Oct	Nov

Tariff Schedule

Canadian tariffs are usually applied to imported cauliflower in or around the period of July 15 to December 2. When the harvest is well underway and sufficient volume is available, the Cole Crop Growers Association asks the B.C. Vegetable Marketing Commission to make the tariff application. They then make a formal application to the Canadian Horticultural Council and if the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for a maximum of 20 weeks and should be cancelled as soon as local market volumes prove insufficient to supply the local markets in part. Current tariff rates on cauliflower are free B.P. (British Preferential) and 1 cent per pound but not less than 5 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland:
Cloverdale Lettuce and Vegetable Co-operative
15350 No. 10 Highway
Surrey, B.C.
Phone: 576-8611

Vancouver Island:
Island Vegetable Co-operative Association
2805 Quesnel
Victoria, B.C.
Phone: 382-8203

Nanaimo Branch
6451 Portsmouth Road
Lantzville, B.C.
Phone: 390-2312

Interior:
Interior Vegetable Marketing Agency Ltd.
2908-31st Avenue
Vernon, B.C.
Phone: 545-5100
545-0694

CELERY

Celery production is heavily concentrated in the Lower Mainland with some production both on Vancouver Island and in the Interior. The B.C. Vegetable Marketing Commission regulates the production and marketing of celery and sales of celery at the coast are handled by the Cloverdale Lettuce and Vegetable Co-operative. In recent years, production levels have remained fairly stable. Sales are usually to the Vancouver wholesale market but shipments of celery to the Prairies occur fairly regularly throughout the marketing season.

Varieties

Celery varieties which are grown commercially include Utah 52-70R, Florida 683 and Clean Cut.

Nutrition

Celery is very low in calories and has a fair content of vitamins A and B as well as many minerals.

Merchandising and Display

Celery should be trimmed to remove any discolouration before it is displayed and should be handled with care to minimize damage to the leaves. It should be displayed on a refrigerated rack with the butts all placed in one direction. If the celery is not in bags, it should be sprinkled periodically to retain its crispness.

Uses

Celery can be used in many ways including raw as an appetizer with dip or a spread or filling, in salads, soups, stews or in casseroles. It can also be added to turkey stuffing, potato salad and seafood sandwich fillings.

Storage Recommendations for Celery

Temperature: 32 F (0 C)
Relative Humidity: 95%

Celery, if cooled rapidly after harvest and held at 32 F (0 C) and high humidity, has a storage life of approximately 3 months. Because celery is extremely prone to wilting, rapid cooling after harvest is essential. Immersion in ice water and other forms of hydrocooling either before or after packing in crates have been found most satisfactory. Vacuum-cooling is also helpful, and top-icing is particularly beneficial before transit.

Freezing damage has been reported at temperatures as high as 31.5 F (-0.3 C). However, temperatures below 34 F (1.1 C) are needed to prevent the growth of rot organisms in storage. It is absolutely essential, therefore, that precise temperatures be maintained. Because of the leafy nature of the crop and its fairly high rate of respiration, special attention to stacking in storage rooms is necessary to maintain uniform temperatures. Spaces for air movement both vertically and horizontally are needed between crates and the celery should be trimmed flush with the top of the crates.

Some storage disorders such as soft rot, mineral deficiencies and root rot have their origin in the field. To prevent the development of these disorders, it is helpful to have a knowledge of the conditions under which the celery was grown and to inspect celery going into storage. Root rot, caused by Centrospora acerina (Hartig) Newhall, can be controlled by dipping the trimmed butts of celery in a 2 percent suspension of copper 8-quinolinolate. **(N.B. Before using these chemicals, refer to the legal regulations that apply to their use in your area).** Most other storage disorders are caused by fungi and develop rapidly once established. Close scrutiny of celery during storage is advisable.

Tests on a semi-commercial scale have shown that jacketed storage provides a much improved method of storing celery.

Moisture retention and quality have been improved by storing celery in vented or sealed 1.5 mil (0.04 mm) polyethylene crate liners at 32 F (0 C). Use of sealed liners, resulting in a 2-3 percent carbon dioxide concentration, has no adverse effects and helps retain green colour.

Grade Standards in Effect for Celery[2]

28. The grades for celery are Canada No. 1, Canada No. 1 Heart and Canada No. 2.

Canada No. 1 Grade

29. (1) Canada No. 1 is the grade name for celery that
(a) is fresh;
(b) is trimmed so that any outside coarse or damaged branches have been removed and the portion of the main root remaining is not more than 3 inches in length;
(c) has stalks that have inner heart branches of a number, length and stockiness characteristic of the variety when mature;
(d) is free from decay, heart rot and stalks that plainly show the formation of seed stems;
(e) is free from damage;
(f) has stalks of a minimum length of 12 inches, a minimum average midrib length of 7 inches and a minimum diameter of 2 1/2 inches if more than 24 stalks are packed in a package and a diameter of 3 inches if 24 or less stalks are packed in a package;
(g) has, when in a package, stalks that do not vary more than 1 1/2 inches in diameter or more than 2 inches in length; and
(h) is properly packed.

(2) For the purposes of subsection (1),
(a) the length of a stalk of celery is the distance from the point where the main root is cut off to a point that represents the average extremity of the outer whorl of branches;
(b) the average midrib length is the average length of all the branches in the outer whorl measured from the point of attachment at the base to the first node; and
(c) the diameter of a stalk of celery is the diameter 2 inches above the point where the lowest branch is attached to the base.

(3) In this section, "free from damage" means that the celery is free from
(a) insect or mollusk injury that affects
(i) inner branches, or
(ii) an aggregate area exceeding 1 square inch per stalk on the outer branches;
(b) pithiness that affects more than two branches of any one stalk; or
(c) any injury or defect, or a combination thereof, other than an injury or defect referred to in paragraphs (a) and (b), that materially affects the appearance, edibility or shipping quality of the celery.

Canada No. 1 Heart Grade

30. Canada No. 1 Heart is the grade name for celery that possesses the characteristics of Canada No. 1 grade except uniformity of size, minimum diameter and minimum stalk length.

Canada No. 2 Grade

31. (1) Canada No. 2 is the grade name for celery that
(a) is free from heart rot and from stalks that plainly show the formation of seed stems;
(b) is free from decay;
(c) is free from any injury or defect or a combination thereof that seriously affects the appearance, edibility or shipping quality of the celery;
(d) has stalks of a minimum diameter of 2 1/2 inches; and
(e) is properly packed.

(2) For the purpose of subsection (1), the diameter of a stalk of celery is the diameter 2 inches above the point where the lowest branch is attached to the base.

General Tolerances

32. Notwithstanding anything in these Regulations, in the grading of celery not more than
(a) 10 percent of the packages, where the celery is in packages, may contain more than 5 percent more or less stalks than the number marked thereon or may contain stalks that exceed the permitted size variation,
(b) 5 percent of the celery by count may be below the minimum diameter or length,
(c) 2 percent of the celery by count may be affected by decay,
(d) 5 percent of the celery by count may have the same grade defects, and
(e) 10 percent of the celery by count may have grade defects other than those referred to in paragraphs (a) and (b) but including those referred to paragraphs (c) and (d),
and still meet the grade standards for a grade.

Pack Sizes

Canadian:	cartons - 24's, 30's
American:	cartons - 60-65 lbs.
	crates - wirebound, 55-60 lbs.

Estimated Number of Cases per Trailer Load

Celery - 700 cases per trailer load.

Fresh Celery Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California		Jan - Dec	
B.C.	Jul	Aug - Oct	Nov

Tariff Schedule

Canadian tariffs are usually applied to imported celery in or around the period of July 15 to November 18. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for 18 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on celery are free B.P. (British Preferential) and 2 cents per pound, but not less than 15 percent ad valorum (M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland:
Cloverdale Lettuce and Vegetable Co-operative
15350 No. 10 Highway
Surrey, B.C.
Phone: 576-8611

CHINESE VEGETABLES

The main production of Chinese vegetables is located in the Lower Mainland. Production is not regulated so growers may set their own prices and establish their own marketing channels. The majority of Chinese vegetables are sold through the Lower Mainland Farmer's Co-operative, a producer owned co-operative formed by several of the Chinese growers in the Richmond area.

Varieties

1. **Bok choy** (Chinese chard) - a tender vegetable with thick, white stems and wide, dark green leaves. Taste is mild.
2. **Choy sum** - a smaller, more tender variety of Bok choy.
3. **Sui choy** (Chinese cabbage, Nappa) - a variety of cabbage that grows like celery but has tightly packed yellow-white stalks about 14-16 inches (35-40 cm) long topped with pale green leaves. Has a taste similar to cabbage, but is milder.
4. **Gai choy** (Mustard greens) - a dark green, leafy vegetable with tightly packed fan-like leaves. Has a distinctive strong taste.
5. **Gai lan** (Chinese broccoli) - a dark green, leafy vegetable with thick, irregularly shaped stalks, 12-14 inches (30-35 cm) long. Has a milk taste.
6. **Fu Qua** (Bitter melon) - a long, thin melon with shiny green, wrinkled skin.
7. **Now qua** (Fuzzy melon) - a cylindrical melon, about 6 inches (15 cm) long and covered with fine fuzz.
8. **Ho lon dow** (Snow peas) - sweet, tender peas which are picked before maturity. Both peas and pods are eaten.
9. **Gau gai** (Matrimony vine) - a thorny vine with 1 inch (2.5 cm) long green leaves.
10. **Si young choy** (Watercress) - a plant with thin stems and round, medium green leaves.
11. **Yen sai** (Chinese parsley) - an aromatic herb with long stems and flat curly leaves.
12. **Lo bak** (Chinese radish) - a mild-flavoured white radish 2-4 inches (5-10 cm) in diameter, 6-10 inches (15-25.5 cm) in length.
13. **Ngah choi** (Bean sprouts) - 1 1/2-2 inches (4-5 cm) long sprouts of mung beans with parchment-like husks that are removed before use.

Nutrition

Bok choy, Choy sum, Sui choy, Gai choy, and Gai lan are low in calories and are good sources of vitamins A and C as well as calcium and several other vitamins and minerals.

How lon dow is a good source of protein, calcium, phosphorus, iron, potassium, thiamine and riboflavin and has vitamins A and C in lesser quantities.

Si young choy contains vitamins A and C and is a good source of calcium and riboflavin.

Lo bak is high in calcium, phosphorus, potassium and Vitamin C and is low in calories.

Ngah choi contain protein, vitamins and minerals and due to their high water content, are low in calories.

Merchandising and Display

All Chinese vegetables should be displayed on refrigerated racks or trays and sprinkled occasionally to keep their freshness. Colour and textural differences can be used very effectively.

Uses

Bok choy, choy sum, sui choy, gai choy, and gai lan can be served plain and as an accompaniment in salads, soups, casseroles, meat and other vegetable dishes. The stalks can be separated, washed and cut into thick diagonal strips before use. These vegetables can be used raw or cooked.

Lo bak should be washed before using. If the skin is hard, it can be peeled. Lo bak can be used in salads or stir-fried, braised or simmered in soups.

Ho lon dow can be eaten raw but it is most often steamed or stir-fried. It should be cooked just to the crisp-tender stage.

Ngah choi add crunchiness to sandwiches, salads and omelets when used raw. They are also an important ingredient in many stir-fry dishes. They should be cooked only a short time so that they remain crisp.

Storage Recommendations for Chinese Vegetables

Temperature: 32 F (0 C)
Relative Humidity: 90-95%

Chinese vegetables should be cooled immediately after harvest to 32 F (0 C). The fresh produce does not store very well for long periods of time and should be moved to market very quickly. Air circulation is important at all times.

Grade Standards in Effect for Chinese Vegetables

There are no grade standards currently in effect for Chinese vegetables.

Pack Sizes

Canadian: Bok Choy - cartons, 60 lbs.
- cartons, 30 lbs.
Lo Bak - cases, 20 lbs.
Sui Choy - cartons, 70 lbs.
- cartons, 30 lbs.
American: Bok Choy - crates, WGA, 60 lbs.
- crates, wirebound, 45-50 lbs.
- cases, 15 lbs.
Choy Sum - crates, WGA, 60 lbs.
- crates, 30 lbs.
Gai Choy - crates, WGA, 50 lbs.
Lo Bak - cases, 20 or 50 lbs.
Ho Lon Dow - cases, 10 lbs.
Sui Choy - crates, WGA, 75 lbs.
- cases, 15 lbs.

Estimated Number of Cases per Trailer Load

These are not shipped in straight loads.

Fresh Bok Choy Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	Nov	Dec - May	Jun - Sep

Fresh Chinese Vegetable Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.	May	Jun - Nov	Dec
California	Nov	Dec - May	Jun - Sep

Tariff Schedule

Canadian tariffs are usually applied to imported Bok choy in or around the period of May 13 to December 9. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for 30 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on Bok choy are 1.25 cents per pound, but not less than 15 percent ad valorum B.P. (British Preferential) and M.F.N. (Most Favoured Nation) and 3.75 cents per pound, but not less than 45 percent ad valorum General tariff. There are no tariffs in effect for any of the other Chinese vegetables.

Principal Suppliers in B.C. by Area

Lower Mainland:
B.C. Lower Mainland Farmer's Co-operative
272 East Pender Street
Vancouver, B.C.
Phone: 683-7024

CORN

Corn production in B.C. is concentrated in the Lower Mainland near the processors. Corn is grown primarily for the processing market and the Fraser Valley Corn Association negotiates the contracts with the processors on the grower's behalf. A small percentage of the corn grown in the Lower Mainland is sold fresh on the Vancouver wholesale market while nearly all of the corn grown in other regions is sold fresh, either through commercial agencies or by farm or roadside stands.

Varieties

There are several varieties of corn which are grown commercially in B.C., including Sunny Vee, Morning Sun, Sundance, Northernbelle, Jubilee and Silver Queen.

Nutrition

Corn has a variety of vitamins and minerals including generous amounts of vitamin A and iron.

Merchandising and Display

Corn must be kept cold and sprinkled regularly to prevent the sugar to starch conversion. A rapid turnover and introduction of fresh stock daily is desirable in order to offer the best quality. Corn should not be bulked too high or it will heat and start to convert sugar to starch.

Uses

Corn is a versatile vegetable and can be eaten in a variety of ways. It can be boiled, steamed or roasted on the cob and served with butter and salt and pepper. Corn makes a good addition to soup or chowder, succotash and stews. It can be used in fritters, stuffed peppers, souffles and casseroles. Corn can also be used in mixed pickles and in relishes.

Storage Recommendations for Corn[1]

Temperature: 32 F (0 C)
Relative Humidity: 90-95%

Sweet corn has a maximum storage life of 8 days if cooled and stored under optimum conditions. It should be harvested at the milk stage (when the juice from the kernel is milky in appearance) and cooled as rapidly as possible. Hydrocooling by spraying or immersion in water at temperatures near 32 F (0 C) is most effective. Vacuum-cooling and air-cooling can also be used if the corn is moist. The main purpose of cooling is to retain the original flavour and succulence of the corn. These qualities are lost through normal reactions involving, in particular, the conversion of sugars to starch. Because these reactions proceed more rapidly at high temperatures [about six times as quickly at 68 F (20 C) as at 32 F (0 C)], it is important to cool corn as quickly as possible.

When shipped to market, sweet corn should be copiously iced and care should be taken to have the ice in contact with as much of the corn as possible. Because the insulation afforded by the husk and the cob tends to withhold the heat of respiration, a certain amount of air circulation within the stack is also recommended. These conditions are most easily attained if the corn is packed in crates, the five-dozen size being most common.

Grade Standards in Effect for Fresh and Processed Corn[2]

33. The grade for sweet corn is Canada No. 1.

Canada No. 1 Grade

34. (1) Canada No. 1 is the grade name for sweet corn that
(a) has similar varietal characteristics;
(b) is free from ears that are misshapen or stunted in growth;
(c) has ears on which
    (i) the undeveloped ends do not exceed 1/4 of the length of the ear, and
    (ii) the appearance and quality of the edible portion is not affected by poorly developed rows;
(d) has ears that have
    (i) kernels that are tender, plump and milky, and
    (ii) rows of kernels that are of fairly uniform development;
(e) is well covered with fresh, unbroken green husks or, if the husks have been removed, is protected by transparent wrappers;
(f) is free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (e), that materially affects the appearance, edibility or shipping quality of the corn;
(g) has a minimum of 4 inches of edible kernels of corn on each ear; and
(h) is properly packed.

(2) Packages containing Canada No. 1 grade sweet corn shall have marked thereon or on a tag attached thereto the word "Small", if the ears packed therein have, when measured lengthwise, a minimum of 4 inches and a maximum of 6 inches of edible kernels of corn.

(3) Notwithstanding paragraphs (1)(e) and (f), ears of Canada No. 1 grade sweet corn may be trimmed at the tassel end of the trimming does not result in the removal of all evidence of tapering of the ear.

General Tolerances

35. Notwithstanding anything in these Regulations, in the grading of sweet corn not more than
(a) 10 percent of the packages, where sweet corn is in packages containing 30 or less ears, may contain 5 percent more or less than the number of ears marked thereon,
(b) 10 percent of the packages, where sweet corn is in packages containing 36 ears or more, may contain 2 ears more or less than the number of ears marked thereon,
(c) 15 percent of the ears by count may exceed the maximum length,
(d) 5 percent of the ears by count may be below the minimum length,
(e) 1 percent of the ears by count may be affected by decay,
(f) 5 percent of the ears by count may have the same grade defect,
(g) 10 percent of the ears by count may have grade defects other than those referred to in paragraphs (a) to (d) but including those referred to in paragraphs (e) and (f),
and still meet the grade standards for a grade.

Pack Sizes

Canadian: waxed cartons - 5 dozen
American: waxed cartons - 5 dozen

Estimated Number of Cases per Trailer Load

Corn - 850-900 cases per trailer load.

Fresh Corn Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	New Crop	Active Supply	Shipping Decreases
Washington		Jul - Aug	Sep
California	May	Jun - Jul	Aug - Oct
B.C.		Aug - Sep	Oct
Florida	Mar	Apr - Jun	Jul

Tariff Schedule

Canadian tariffs are usually applied to imported corn in or around the period of August 1 to October 17. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for 12 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on corn are free B.P. (British Preferential) and 1.5 cents per pound, but not less than 15 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland:
Field (10 acres +) - Cheema & Chahal Farms Ltd. - Mission, 826-6981
R.W. Featherstone - Delta, 594-8028
Kondolay Bros. Farms Ltd. - Clearbrook, 853-9022
H.S. Rai Farms Ltd. - Aldergrove, 534-3831
Processed (50 acres +) - J. Ackermann - Abbotsford, 852-2244
Berryland Canning Co. Ltd. - Sardis, 858-7151
Franks Farms Ltd. - Chilliwack, 794-7150
Fraser Valley F.F. - Chilliwack, 795-7281
L. Guichon - Delta, 946-9976
M. Guichon - Delta, 946-7006
R. Guichon - Delta, 946-2192
L. Joiner - Sardis, 858-4921
D.L. Jones - Chilliwack, 792-5489
J.A. Nottingham Co. Ltd. - Delta, 946-4254
H.S. Rai Farms Ltd. - Aldergrove, 534-3831
Royal City Foods Ltd. - Burnaby, 420-3510
Sandhu Farms Ltd. - Abbotsford, 853-8755

Processed (50 acres +) - H.R. Savage & Sons - Delta, 946-6448
Seabird-Wigand - Agassiz, 796-2457
Snowcrest Packers Ltd. - Abbotsford, 859-4881
Springbank Dehy. Ltd. - Chilliwack, 794-7118
Sumas River Growers Ltd. - Abbotsford, 859-7089

Vancouver Island: (10 acres +)
Field - Farquaharson Farms Ltd. - Courtenay, 338-8194
Naesgaard's Farm - Port Alberni, 723-3622

Interior: (25 acres +)
Field - Suncrisp Farm - Salmon Arm, 832-9070
Demille's Sweet Corn & Produce - Salmon Arm, 832-6856

CUCUMBERS

The production of cucumbers occurs in all three districts of the province. Field cucumbers are grown primarily in the Interior while greenhouse production dominates on the Island and in the Lower Mainland. Greenhouse seedless cucumbers have grown in popularity in recent years in response to improved cultivation practices and aggressive marketing. Greenhouse cucumbers are marketed through the Western Greenhouse Grower's Co-operative in the Lower Mainland and the Island Greenhouse Grower's Co-operative in the Victoria area, designated selling agencies of the B.C. Vegetable Marketing Commission. Sales of cucumbers in the interior are largely through the Interior Vegetable Marketing Agency. Greenhouse production in the interior has been slowly increasing in recent years. Production of pickling cucumbers has declined steadily in the Lower Mainland as only a few companies in B.C. continue to process them.

Greenhouse cucumbers are sold exclusively to the Vancouver wholesale market while field cucumbers are sold either on the wholesale market, by farm or roadside sales or to the processor.

Varieties

Cucumber varieties for field production include Gemini, Victory, Triumph and Pioneer. White, spine greenhouse varieties include Burpee's Hybrid and Highmark II. Long English varieties for greenhouse production are Farona, Corona and Farbio.

Nutrition

Cucumbers are very low in calories and when unpared, contain large amounts of vitamin A and iron as well as a variety of other nutrients.

Merchandising and Display

Cucumbers should be displayed on a refrigerated rack to avoid ripening and may be sprinkled if not waxed or wrapped. They can be placed parallel to the front of the rack and displayed with other salad items.

Uses

Cucumber is usually eaten raw but thickly cut slices or chunks can be sauteed or deep-fried. Raw cucumber can be used in many different types of raw salads and it can also be used in sandwiches and canapes. Cucumber can be used in relishes and pickles.

Storage Recommendations for Cucumbers

Temperature: 45-48 F (7.2-8.9 C)
Relative Humidity: 95%

Cucumbers have a storage life of only 10 days to 2 weeks at 45-48 F (7.2-8.9 C) and high relative humidity. They are sensitive to temperature; below 45 F (7.2 C), chilling injury develops, as evidenced by surface pitting and dark water patches, and this is followed by the onset of rots, especially when the temperature is raised. Chilling injury may occur in 2 days at 32 F (0 C). At temperatures above 50 F (10 C) however, yellowing occurs. Yellowing is accelerated by ethylene from such things as tomatoes, apples and peaches. Thus, it is important that cucumbers be cooled quickly to 45-50 F (7.2-10 C), and that they be held at this temperature during storage or transit.

Slatted crates permit good air exchange and are recommended. Cucumbers are sometimes waxed or wrapped to reduce moisture loss, which occurs readily. Controlled atmosphere storage with 0% carbon dioxide and 3-5% oxygen is in limited use in the U.S. for long-distance shipping.

Grade Standards in Effect for Field and Greenhouse Cucumbers[2]

FIELD CUCUMBERS

36. The grades for field cucumbers are Canada No. 1 and Canada No. 2.

Canada No. 1 Grade

37. (1) Canada No. 1 is the grade name for field cucumbers that
(a) are fresh, sound and firm;
(b) are practically straight, not more than very slightly constricted and not more than moderately tapered or pointed;
(c) have a good characteristic green colour over at least 85 percent of the surface area of each specimen;
(d) are free from decay and sunscald;
(e) are free from damage;
(f) do not, when in a package, with the exception of 1 specimen, vary more than 3/4 inch in diameter of 2 inches in length;
(g) have a maximum diameter of 2 3/4 inches and a minimum length of 6 inches; and
(h) are properly packed.

(2) In this section, "free from damage" means that the field cucumbers are free from
(a) scars that affect more than 5 percent of the surface area of an individual cucumber; and
(b) any injury or defect, or a combination thereof, other than a defect referred to in paragraph (a), that materially affects the appearance, edibility or shipping quality of the cucumbers.

Canada No. 2 Grade

38. (1) Canada No. 2 is the grade name for field cucumbers that
(a) are fresh, sound and firm;
(b) are not more than moderately curved, not severely constricted and not extremely tapered or pointed or otherwise misshapen;
(c) have a good characteristic green colour over at least 75 percent of the surface area of each specimen;
(d) are free from decay and sunscald;
(e) are free from damage;
(f) have a minimum length of 4 inches; and
(g) are properly packed.

(2) In this section, "free from damage" means that the field cucumbers are free from
(a) scars that affect more than 10 percent of the surface area of an individual cucumber; and
(b) any injury or defect, or a combination thereof, other than defects referred to in paragraph (a), that seriously affects the appearance, edibility or shipping quality of the cucumbers.

General Tolerances

39. Notwithstanding anything in these Regulations, in the grading of field cucumbers not more than
(a) 5 percent of the field cucumbers by count may exceed the maximum diameter or may be shorter than the minimum length,
(b) 10 percent of the packages, where the field cucumbers are in packages, may have field cucumbers that exceed the permitted size variation,
(c) 1 percent of the field cucumbers by count may be affected by decay,
(d) 5 percent of the field cucumbers by count may have the same grade defect, and
(e) 10 percent of the field cucumbers by count may have grade defects other than those referred to in paragraphs (a) and (b) but including those referred to in paragraphs (c) and (d),
and still meet the grade standards for a grade.

GREENHOUSE CUCUMBERS

40. The grades for greenhouse cucumbers are Canada No. 1 and Canada No. 2.

Canada No. 1 Grade

41. Canada No. 1 is the grade name for greenhouse cucumbers that
(a) have similar varietal characteristics;
(b) are fresh, sound and firm;
(c) are fairly straight and not more than slightly tapered;
(d) have a good characteristic green colour over at least 85 percent of the surface area of the specimen;
(e) are free from decay;
(f) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (e), that materially affects the appearance, edibility or shipping quality of the cucumbers;
(g) have
    (i) in the case of long, seedless cucumbers, a minimum length of 11 inches, and
    (ii) in the case of other types of cucumbers, a minimum length of 6 inches;
(h) do not, when in a package, with the exception of 1 specimen, vary more than
    (i) 1/2 inch in diameter or 2 1/2 inches in length in the case of long, seedless cucumbers, and
    (ii) 1/2 inch in diameter or 1 1/2 inches in length in the case of other types of cucumbers;
(i) have, in the case of long, seedless cucumbers, a minimum diameter of 1 1/2 inches when packed during the period commencing on October 1 and ending on March 31 and a minimum diameter of 1 5/8 inches when packed during the period commencing on April 1 and ending on September 30; and
(j) are properly packed.

42. For the purposes of subparagraph 41(h)(i) and paragraph 41(i), diameter means the diameter as measured from a point that is 1/4 of the length of a cucumber from the blossom end.

Canada No. 2 Grade

43. Canada No. 2 is the grade name for greenhouse cucumbers that
(a) have similar varietal characteristics;
(b) are fresh, sound and firm;
(c) are not materially curved, constricted, pointed or otherwise materially misshapen;
(d) have a good characteristic green colour over at least 75 percent of the surface area of each specimen;
(e) are free from decay;
(f) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (e), that seriously affects the appearance, edibility or shipping quality of the cucumbers;
(g) have minimum length of 4 1/2 inches; and
(h) are properly packed.

General Tolerances

44. Notwithstanding anything in these Regulations, in the grading of greenhouse cucumbers not more than
(a) 5 percent of the greenhouse cucumbers by count may be below the minimum length,
(b) 10 percent of the packages, where the greenhouse cucumbers are in packages, may contain a greater or lesser number of greenhouse cucumbers than the number marked thereon or may contain greenhouse cucumbers that exceed the permitted size variation,
(c) 1 percent of the greenhouse cucumbers by count may be affected by decay, and
(d) 5 percent of the greenhouse cucumbers by count may have grade defects other than those referred to in paragraphs (a) and (b) but including that referred to in paragraph (c),
and still meet the grade standards for a grade.

Pack Sizes

Canadian: Field - carton, 30 lbs.
White Spine - carton, cello wrapped, 24's
Long English - carton, 18's
Dill - case, 20 lbs.
American: Field - cartons, 1 1/9 bushel, 55 lbs.
White Spine - cases, 25 lbs.
- cases, 24's, 28's, 30's
Long English - cases, 12's, 15's, 20's

Estimated Number of Cases per Trailer Load

Cucumbers (field) - 1300-1500 cases per trailer load.
Cucumbers (Long English) - 2000-2200 cases per trailer load.

Fresh Cucumber (field) Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
Mexico	Oct	Nov - Apr	May
California	Apr	May - Nov	Dec
B.C.	Jul	Aug - Oct	
Texas	Apr	May - Nov	Dec
Washington	Jun	Jul - Oct	Nov

Fresh Cucumber (greenhouse) Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	New Crop	Active Supply	Shipping Decreases
B.C.	Feb	Mar - Oct	Nov
Spain	Oct	Nov - Jan	Feb

Tariff Schedule

Canadian tariffs are usually applied to imported cucumbers n.o.p. in or around the period of May 1 to November 6. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for 30 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on cucumbers n.o.p. are free B.P. (British Preferential) and 2.25 cents per pound, but not less than 15 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland:
Western Greenhouse Grower's Co-operative Association
15350 No. 10 Highway
Surrey, B.C.
Phone: 576-8525

Vancouver Island:
Vancouver Island Greenhouse Grower's Co-operative
2180 Keatting Cross Road
Victoria, B.C.
Phone: 652-3971

Interior:
Interior Vegetable Marketing Agency Ltd.
2908-31st Avenue
Vernon, B.C.
Phone: 545-5100
545-0694

GARLIC

There is very little commercial production of garlic in B.C. at this time but a strong market demand exists and production is increasing. Garlic production is scattered fairly equally in all three regions with small but expanding acreages. Market potential is very favourable since all garlic unloads to the Vancouver market are imports, most garlic coming in from California.

B.C. garlic is presently sold commercially by farm-gate sales, direct sales with a small percentage being shipped to Alberta and to major retailers. The prices have been very steady but a recent demand for 'elephant' garlic has created much higher prices for that commodity.

Varieties

Varieties of garlic are not well categorized but several registered varieties are available for commercial production. These include: Canadian Fall; Italian Fall; Spring Garlic; California White; California Early; California Late; Mexican White; Italian Red; and Elephant Garlic.

Nutrition

The medicinal properties of garlic have been well documented and are largely attributed to the generous amounts of organic sulphur compounds which have antibacterial properties. In addition to these compounds, garlic contains large amounts of phosphorus, potassium and thiamine and lesser quantities of carbohydrates and proteins.

Merchandising and Display

Garlic is usually stocked in small quantities so should be placed strategically to draw attention to it, either by placing it near onions, salad items or a section for miscellaneous vegetables. Refrigeration is not necessary but can be used if it is available.

Uses

Garlic has a wide variety of uses and is a flavourful addition to both meat and vegetable dishes including stews, soups, salad dressings, tomato dishes, sauces, pickles and sausages.

Storage Recommendations for Garlic[1]

Temperature: 32 F (0 C)
Relative Humidity: 65-70%

Garlic is best stored under temperature and humidity conditions recommended for onions. It should be well cured before going into storage; then, if it is in good condition, it should keep at 32 F (0 C) for 6-8 months. Sometimes garlic is stored in common, air-ventilated storages; under these conditions, if kept cool, dry and well ventilated, it may be held for 3-4 months, or sometimes longer depending on the temperature. Garlic is usually stored in loose mesh bags, which are piled two layers deep in stacks separated by air spaces.

Grade Standards in Effect for Garlic

There are no grade standards currently in effect for garlic.

Pack Sizes

Canadian: sacks, 30 lbs.
braids, 2 1/2-3 lbs.
American: sacks, 30 lbs.
cello boxes, 2 oz.
braids, 2 1/2-3 lbs.

Estimated Number of Cases per Trailer Load

Garlic - is not shipped in straight loads.

Fresh Garlic Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California		Jan - Dec	
Mexico	Mar	Apr - Jun	Jul - Aug
Taiwan	Apr	May - Sep	Oct

Tariff Schedule

The current tariff rate for garlic is 5 percent ad valorum 12 months of the year.

Principal Suppliers in B.C. by Area

Lower Mainland: (1 acre +)
Field - Ray Goodfriend & Son - Surrey, 581-9979
Townline Growers - Abbotsford, 859-9507
A. Matic - Surrey, 576-1207

Vancouver Island: (1 acre +)
Field - Grout's Gardens - Courtenay, 338-8156 or 338-0724
C. Lefevre - Hornby Island, 338-0893 or 689-3032
Processed - no production

Interior: (1 acre +)
Field - R. Bellomo - Creston, 866-5303
J. Hodges - Winlaw, 226-7761
J. McKechnie - Armstrong, 546-6528
O. Schreyer - Vernon, 542-9653

LEEKS

Leek production in B.C. is mostly limited to the Lower Mainland where it is often grown in conjunction with Chinese vegetables. Production is slowly increasing as the market expands but it is still of only minor importance at this time. Leeks are marketed through the B.C. Lower Mainland Farmer's Co-operative Association which is a producer-owned co-operative formed by many of the Chinese growers in the Richmond, Burnaby and Surrey areas. A small percentage of leeks are sold through roadside stands.

Nutrition

Leeks are a good source of vitamin C and are low in calories.

Merchandising and Display

Leeks are very perishable so should be displayed under refrigeration and should be lightly sprinkled regularly. They can be displayed with the salad items or with Chinese vegetables and may be placed parallel to the edge of the rack for easier consumer grasp.

Uses

Leeks can be used as an addition to meat, fish and cheese dishes as well as in salads. Leeks are used in many stir-fry dishes or can be made into soup. They can also be boiled for a few minutes until tender and served in the same ways as asparagus.

Storage Recommendations for Leeks

Temperature: 32-45 F (0-7.2 C)
Relative Humidity: 95%

Leeks have a short storage life. Hydrocooling and icing can be employed to retain freshness. When treated in this manner leeks can be held up to 2 weeks.

Grade Standards in Effect for Leeks

There are no grade standards currently in effect for leeks.

Pack Sizes

Canadian:	cases, 1 dozen bunches, 15 lbs. cases, 30 lbs.
American:	cases, 1 dozen bunches, 15 lbs. cases, 30 lbs.

Estimated Number of Cases per Trailer Load

Leeks - are not shipped in straight loads.

Fresh Leek Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	New Crop	Active Supply	Shipping Decreases
B.C.	Mar	Apr - Nov	Dec
California	Dec	Jan - Jul	Aug

Tariff Schedule

The current tariff rate for leeks is 5 percent ad valorum 12 months of the year.

Principal Suppliers in B.C. by Area

Lower Mainland:
B.C. Lower Mainland Farmer's Co-operative
272 East Pender Street
Vancouver, B.C.
Phone: 683-7024

LETTUCE

The production if iceberg and fancy lettuce is concentrated in the Lower Mainland but production exists to varying degrees in other areas of the province. Lettuce production is relatively stable although the market for greenhouse lettuce has expanded, due in part, to aggressive marketing. Lettuce is a regulated commodity and its sales are handled through the Cloverdale Lettuce and Vegetable Co-operative, the Western Greenhouse Grower's Co-operative Association and the Lower Mainland Farmer's Co-operative.

Varieties

Ithaca is a variety of crisp-heading lettuce which is commonly grown while Prize Head, Deep Red and Grand Rapids are all leaf varieties. Paris Island and Paris White are both commercially grown varieties of Cos (Romaine) lettuce and Bibb and Dark Green Boston are butterhead varieties.

Nutrition

Lettuce contains useful amounts of vitamins A and C, iron and calcium as well as other vitamins and minerals. Boston and Bibb varieties are high in iron. Lettuce also contains very few calories.

Merchandising and Display

Lettuce should be kept cold and moist at all times to preserve its freshness. If it is displayed in bulk, it should either be iced or under refrigeration and should be sprinkled lightly. Lettuce that is wrapped should also be kept cold. The different types of lettuce should be displayed together with signs explaining their characteristics and uses.

Uses

Lettuce is often regarded as a principal salad ingredient but it can also be used in sandwiches, soups and oriental dishes.

Storage Recommendations for Lettuce[1]

Temperature: 32 F (0 C)
Relative Humidity: 95%

Although there are several types of lettuce, practically all commercial lettuce is of the crisp head type. Lettuce is not a long-storage crop but if its temperature is reduced rapidly to 32 F (0 C) and held at this level while the humidity is kept very high, head lettuce can be stored for 2-3 weeks or possibly slightly longer. Good temperature control is necessary if 32 F (0 C) is to be maintained without freezing. Lettuce has been observed to freeze at temperatures as high as 31.7 F (-0.2 C). Packing lettuce in individual perforated polyethylene bags or crate liners reduces moisture loss during storage and shipment.

Hydrocooling in ice water and icing in storage help to retain freshness and are most effective if done immediately after harvest and trimming. All damaged lettuce, particularly any affected with tip burn, should be discarded. This disorder leads to breakdown and to slimy rots in storage.

Vacuum cooling has produced revolutionary changes in the handling of lettuce in specialized growing areas. Large quantities of lettuce in boxes or crates are placed in a chamber, which is then evacuated to cause evaporation of the water inside and adjacent to the lettuce, to produce rapid cooling. Because containers remain dry when cooled in this manner, fiber containers may be used, and rots are reduced during transit and marketing.

Lettuce should not be stored with fruits such as apples, pears, peaches, or melons, which produce ethylene. Small concentrations of this gas cause yellowing and russet spotting. Low oxygen atmospheres prevent russet spotting, but carbon dioxide at 4 percent may cause injury.

Grade Standards in Effect for Head Lettuce[2]

45. The grades for head lettuce are Canada No. 1 and Canada No. 2.

Canada No. 1 Grade

46. Canada No. 1 is the grade name for head lettuce that
(a) has similar varietal characteristics;
(b) has head leaves that are crisp and wrapper leaves that are not more than slightly wilted;
(c) has, in the case of Iceberg type, heads that are compact and yield only slightly to pressure;
(d)[Revoked]
(e) is trimmed so that the butt is cut off close to the point of attachment of the wrapper leaves and any coarse, damaged or otherwise objectionable wrapper leaves have been removed, and in the case of Iceberg type, so that the heads do not have more than eight wrapper leaves;
(f) is free from split or burst heads;
(g) is free from heads that plainly show the formation of the seed stem;
(h) is free from heads the shape of which clearly indicates more than one centre of growth;
(i) is free from decay, tipburn and brown blight;
(j) is free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (i), that materially affects its appearance, edibility or shipping quality;
(k) does not, when in a package, vary more than 2 inches in diameter; and
(l) is properly packed.

Canada No. 2 Grade

47. Canada No. 2 is the grade name for head lettuce that
(a) has similar varietal characteristics;
(b) has head leaves that are crisp and wrapper leaves that are not more than slightly wilted;
(c) has, in the case of Iceberg type, heads that show characteristic formation;
(d) is trimmed so that the butt is cut off close to the point of attachment of the wrapper leaves and any coarse leaves have been removed, and in the case of Iceberg type, so that the heads do not have more than eight wrapper leaves;
(e) is free from split or burst heads;
(f) is free from heads that plainly show the formation of the seed stem;
(g) is free from heads the shape of which clearly indicates more than one centre of growth;

(h) is free from decay, tipburn and brown blight;
(i) is free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (h), that
    (i) seriously affects the appearance, edibility or shipping quality, and
    (ii) cannot be removed without a loss of some of the solid portion of the head; and
(j) is properly packed.

General Tolerances

48. Notwithstanding anything in these Regulations, in the grading of head lettuce not more than
(a) 10 percent of the packages, where the head lettuce is in packages, may contain a greater or lesser number of heads than the number marked thereon or may contain heads that exceed the permitted size variation,
(b) 2 percent of the heads by count may be affected by decay in the compact portion,
(c) 3 percent of the heads by count, including those referred to in paragraph (b), may be affected by decay, and
(d) 10 percent of the heads by count may have grade defects other than those referred to in paragraph (a) but including those referred to in paragraphs (b) and (c),
and still meet the standards for a grade.

Pack Sizes

Canadian: carton, 24 heads
American: carton, 24 heads
wirebound crates, 24 heads

Estimated Number of Cases per Trailer Load

Lettuce - 850-900 cases per trailer load.

Fresh Lettuce Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California		Jan - Dec	
B.C.	May	Jun - Oct	Nov

Tariff Schedule

Canadian tariffs are usually applied to imported lettuce in or around the period of June 24 to October 7. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for 16 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on lettuce are free B.P. (British Preferential) and 1.25 cents per pound, but not less than 15 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland:
Cloverdale Lettuce and Vegetable Co-operative
15350 No. 10 Highway
Surrey, B.C.
Phone: 576-8611

Vancouver Island:
Field (5 acres +) - Equinox Valley Farm Ltd. - Comox, 339-3029
J. Mar - Central Saanich, 652-9973
W. Mar - Victoria, 652-1546

Interior: minor production

MUSHROOMS

Mushrooms are one of the few B.C. produce commodities supplying almost 100 percent of the British Columbia market. Mushroom production occurs almost exclusively in the Lower Mainland. Production and marketing of the crop is regulated by the B.C. Mushroom Marketing Board, with sales handled by the Fraser Valley Mushroom Grower's Co-operative, the board's designated selling agency. The co-operative also runs a processing line for mushrooms under the product label "Money's Mushrooms". With more mushrooms consumed annually in B.C. than in any other Canadian province, market expansion is limited by population growth.

Varieties

Only one variety of mushroom is cultivated commercially in B.C. and its name is *Agaricus bisporus*.

Nutrition

Much of the nutritional value in mushrooms is in their skin so it is unadvisable to peel them. Mushrooms are a relatively good source of protein, phosphorus, iron and other minerals. They are also low in calories and are valued for their satiety properties.

Merchandising and Display

Mushrooms should be displayed under refrigeration and because of their short storage life, rapid turn-over is desirable in order to offer high quality daily. They can be sold in bulk or in pre-packaged boxes.

Uses

Mushrooms have a multitude of uses and are a good addition to any dish. They can be used in meat, poultry, seafood, cheese and egg dishes, raw in salads or made into soup. Mushrooms are a nice addition to gravies and sauces but also stand on their own merits when they are stuffed, sauteed, stewed, pickled or used in shish-kebabs.

Storage Recommendations for Mushrooms[2]

Temperature: 32 F (0 C)
Relative Humidity: 85-90%

Fresh mushrooms do not keep well and are therefore stored for only short periods. Deterioration is marked by brown discolouration of surfaces and by opening of veils. Freshly picked mushrooms keep in prime condition at 32 F (0 C) for 5 days, at 40 F (4.4 C) for 2 days, and at 50 F (10 C) for only 1 day. Allowing a marketing period of only 1 day at higher temperatures immediately after storage, they should be kept at 32 F (0 C) for only 3-4 days and at 40 F for up to 2 days. When they are being transported and displayed for sale, mushrooms should be kept constantly under refrigeration.

Grade Standards in Effect for Mushrooms

There are no grade standards presently in effect for mushrooms.

Pack Sizes

Canadian: loose pack - case, 10 lbs.
basket, 2 1/2 lbs.
American: loose pack - case, 10 lbs.
basket - 2 1/2 lbs.

Estimated Number of Cases per Trailer Load

Mushrooms - are not shipped in straight loads.

Fresh Mushroom Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.		Jan - Dec	

Tariff Schedule

Current Most Favoured Nation Canadian tariff rates on fresh mushrooms are 4.5 cents/lb. but not less than 10% advalorem.

Principal Suppliers in B.C. by Area

Lower Mainland:
Fraser Valley Mushroom Grower's Co-operative Association
9770 - 199A Street
Langley, B.C.
Phone: 888-2811

GREEN ONIONS

The majority of green onion production in B.C. is in the Lower Mainland but small quantities of green onions are also grown on Vancouver Island and in the Interior. Production is reasonably stable and most of the produce is sold on the Vancouver Wholesale market although small quantities in each region are sold through roadside stands. The Lower Mainland Farmer's Co-operative handles a good percentage of the crop.

Varieties

White Portugal is the main pickling variety of green onions produced in B.C. but White Lisbon, Beltsville Bunching, Tokyo Long White and White Knight are all grown for the fresh market.

Nutrition

Green onions contain more of their nutrients in their tops rather than in their bulbs. They are a good source of vitamin C and are low in calories.

Merchandising and Display

Green onions are very perishable so should be displayed under refrigeration and should be lightly sprinkled regularly. They can be displayed with the salad items and may be placed parallel to the edge of the rack for easier consumer grasp.

Uses

Green onions can be used as an addition to meat, fish and cheese dishes as well as in salads. They can also be boiled for a few minutes until tender and served in the same ways as asparagus.

Storage Recommendations for Green Onions[1]

Temperature: 32 - 45 F (0-7.2 C)
Relative Humidity: 95%

Onions in this form have a short storage life. Hydrocooling and icing can be employed to retain freshness. When treated in this manner green onions can be held up to 2 weeks.

Grade Standards in Effect for Green Onions

There are no grade standards presently in effect for green onions.

Pack Sizes

Canadian: carton, 48 bunches
carton, 12 bunches
American: carton, 48 bunches
carton, 12 bunches

Estimated Number of Cases per Trailer Load

Green Onions - are not shipped in straight loads.

Green Onion Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	Oct	Nov - May	Jun
B.C.	May	Jun - Sep	Oct

Tariff Schedule

Canadian tariffs are usually applied to imported green onions in or around the period of June 19 to November 18. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can only be applied for 22 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on green onions are free B.P. (British Preferential) and 2.5 cents per pound, but not less than 12.5 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland:
B.C. Lower Mainland Farmer's Co-operative
272 East Pender Street
Vancouver, B.C.
Phone: 683-7024

Vancouver Island: minor production

Interior: minor production

YELLOW ONIONS

Production of yellow onions occurs in varying quantities throughout the province. Approximately half of the province's total production comes from the Lower Mainland while the Interior also produces a large quantity and a smaller percentage is produced on Vancouver Island. Production has remained fairly constant in recent years. Onions are a regulated commodity under the B.C. Vegetable Marketing Commission and are sold through the B.C. Coast Vegetable Co-operative, the Island Vegetable Co-operative and those south of the 53rd parallel, through the Interior Vegetable Marketing Agency (onions are not regulated north of the 53rd parallel).

Onions from the Lower Mainland are mostly sold on the Vancouver wholesale market but a small proportion is sold through roadside stands. Onions grown in the Interior are either shipped to the Prairies or to the Vancouver wholesale market and a small amount is sold through roadside stands. Onions grown on Vancouver Island are either sold through local wholesalers or roadside stands.

Varieties

Walla Walla French is the main fall-seeded variety that is grown in B.C. while Taurus and Copra are spring-seeded varieties grown at the Coast and Taurus and Aries are spring-seeded varieties grown in the Interior.

Nutrition

Onions are a good source of vitamin C and are low in calories.

Merchandising and Display

Onions do not require refrigeration but should be kept dry. The different types should be displayed together and their colour contrast can be used to attract attention. Signs to explain uses as well as mildness or strength are helpful to the consumer.

Uses

Onions are very versatile and can be used as a main vegetable dish or can be used to enhance other dishes. They can be baked, boiled, broiled, creamed, steamed, sauteed, deep-fried, roasted, pickled and used in soups, stews, casseroles and salads.

Storage Recommendations for Yellow Onions[1]

Temperature: 32 F (0 C)
Relative Humidity: 65-70%

Botanically, the onion is a biennial; the first year it produces a bulb, the second year, flowers and seeds. The object of storage is to prevent even the slightest form of growth within the bulb. The bulb, during early storage, is in the resting state and incapable of growth, but after 3-6 months, it changes from this state and enters a critical period in its storage life when both internal and external symptoms of growth may develop. Slight rises in temperature during this period hasten growth. Even the internal development of sprout growth reduces quality and eventually terminates storage life. Thus the storage life of dry onions may be about 5 months, depending on variety, temperature control, and other factors.

However, if treated before going into storage with a sprout inhibitor such as maleic hydrazide or gamma irradiation, onions will remain in the resting state indefinitely. Thus, their storage life may be extended to as long as 8-9 months, depending on such factors as the effectiveness of the sprout inhibitor treatment, the variety of the onions, the presence of disease and the curing procedure used. **(Important: Refer to the legal regulations that apply to the use of sprout inhibitors in your area before employing them.)**

Onions are harvested when mature, which is usually taken to be when at least 50 percent of the stems have bent down to the ground. They are dug and topped and may be left in the field for curing; brittleness of skin and contraction of the neck indicate completion of curing. However, it is preferable to move the onion, after topping, to a storage-curing room. Here, they are piled to a depth not exceeding 15 feet (4.5 m) and air is forced through the pile. It has been found satisfactory to circulate 1 1/2 cubic feet (0.042 m^3) of air per minute for each cubic foot of onions, using unheated outside air for the first 2 days, then air of 75-85 F (23.9-29.4 C) (at source of heat) with 60 percent relative humidity for 8-10 days and, finally, outside air to cool the onions before placing them in storage at 32 F (0 C). About 5 percent of the onion weight has to be evaporated, and completion of curing is indicated by a well-contracted neck and brittle skin. Overcuring causes loss of skin. Excessive humidity or perhaps high temperatures cause staining of the skin. The latter effect may also result from moisture condensation on the surface of the bulbs, as sometimes happens when outside air on a warm day is brought into contact with onions at a lower temperature, that is, when the onion temperature is below the dew point of the outside air.

Grade Standards in Effect for Onions[2]

49. The grades for onions are Canada No. 1, Canada No. 1 Pickling and Canada No. 2.

Canada No. 1 Grade

50. (1) Canada No. 1 is the grade name for onions that
(a) have similar varietal characteristics;
(b) are cured so that the neck is well dried;
(c) are firm;
(d) are free from thick necks, seed stems, root growth, sprouts, ovoid specimens and decay;
(e) are free from specimens the shape of which clearly indicates more than one centre of growth;
(f) are free from damage;
(g) have, when one of the additional grade designations referred to in subsections (2) and (4) is not used in connection with the onions,
    (i) a minimum diameter of 1 3/4 inches and a maximum diameter of 3 inches, or
    (ii) a minimum diameter of 1 3/4 inches and
        (A) conform to a size range marked on the package in which they are packed, or on a tag attached thereto,
        (B) are packed in a transparent package, or
        (C) are in a bulk display in a retail store; and
(h) are properly packed.

(2) The additional grade designation "Small" may be used in connection with Canada No. 1 grade onions that have a minimum diameter of 1 1/4 inches and a maximum diameter of 1 3/4 inches.

(3) The additional grade designation "Jumbo" may be used in connection with Canada No. 1 grade onions that have a minimum diameter of 3 inches.

(4) In the case of onions having a minimum diameter of 2 1/4 inches or greater, the size may be designated as "2 1/4 inches and up", or as the case may be.

(5) In this section and in section 52 of this Table, "free from damage" means the onions are free from
(a) peeling that results in more than 25 percent of the specimens having more than 15 percent of the flesh exposed;
(b) staining that results in more than 10 percent of the specimens having more than 25 percent of the surface area stained; and
(c) any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (a) and (b), that materially affects the appearance, edibility or shipping quality of the onions.

(6) In this section and in section 52 of this Table, "ovoid specimen" means an onion the length of which exceeds 1 1/2 times the diameter.

New Onions

51. Notwithstanding section 50 of this Table, prior to September 16th in any year, onions grown during that year that do not comply with paragraphs 50 (1) (b) and (c) but comply with all other requirements of Canada No. 1 grade and
(a) are cured so that the neck is moderately dry, and
(b) yield only slightly to moderate pressure,
shall be deemed to meet the requirements of Canada No. 1 grade.

Canada No. 1 Pickling Grade

52. Canada No. 1 Pickling is the grade name for onions that
(a) have similar varietal characteristics;
(b) are cured so that the neck is moderately dried;
(c) yield only slightly to moderate pressure;
(d) are free from thick necks, seed stems, root growth, sprouts, ovoid specimens, and decay;
(e) are free from specimens the shape of which clearly indicated more than one centre of growth;
(f) are free from damage;
(g) have
(i) a minimum diameter of 1/2 inch and a maximum diameter of 1 inch, or
(ii) a minimum diameter of 1/2 inch and a maximum diameter of 1 1/2 inches and are packed in a package on which is marked the designation "1/2 inch to 1 1/2 inches" or an abbreviation thereof; and
(h) are properly packed.

Canada No. 2 Grade

53. (1) Canada No. 2 is the grade name for onions that
(a) have similar varietal characteristics;
(b) are cured so that the neck is moderately dried;
(c) yield only to moderate pressure;
(d) are free from thick necks, seed stems, root growth, sprouts, ovoid specimens and decay;
(e) are free from specimens the shape of which clearly indicates more than one centre of growth;
(f) are free from damage;
(g) have a minimum diameter of 1 3/4 inches; and
(h) are properly packed.

(2) In this section, "free from damage" means that the onions are free from any injury or defect or a combination thereof, that seriously affects the appearance, edibility or shipping quality of the onions.

General Tolerances

54. (1) Notwithstanding anything in these Regulations, in the grading of Canada No. 1 grade and Canada No. 2 grade onions not more than
(a) 5 percent of the onions by weight may be below the prescribed or designated minimum size,
(b) 5 percent of the onions by weight may exceed the prescribed or designated maximum size,
(c) 2 percent of the onions by weight may be affected by decay, and
(d) 5 percent of the onions by weight may have grade defects other than those referred to in paragraphs (a) and (b) but including that referred to in paragraph (c),
and still meet the grade standards for a grade.

(2) Notwithstanding anything in these Regulations, in the grading of Canada No. 1 Pickling onions not more than
(a) 5 percent of the onions by weight may be below the minimum size,
(b) 5 percent of the onions by weight may exceed the maximum size,
(c) 10 percent of the onions by weight may be ovoids,
(d) 2 percent of the onions by weight may be affected by decay, and
(e) 5 percent of the onions by weight may have grade defects other than those referred to in paragraphs (a), (b) and (c) but including that referred to in paragraph (d),
and still meet the grade standards for a grade.

Pack Sizes

Canadian: boiler - case, 15 x 3 lbs.
medium - case, 50 lbs.
silverskin - sack, 25 lbs.
American: boiler - pre-pack, case, 16 x 3 lbs.
medium - case, 10 lbs.
- sack, 20 lbs., 50 lbs.
jumbo - case, 40 lbs.
- sack, 25 lbs., 50 lbs.
silverskin - sack, 25 lbs.
all types - pre-pack, sack, 10 x 5 lbs., 12 x 3 lbs., 50 lbs.

Estimated Number of Cases per Trailer Load

Onions - 850-900 cases per trailer load.

Yellow Onion Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.	Aug	Sep - Feb	Mar - Apr
Washington	Jul	Aug - Apr	May
California	Apr	May - Aug	Sep
New Zealand		Feb - Apr	
Oregon	Dec	Jan - Jun	Jul

Tariff Schedule

Canadian tariffs are usually applied to imported onions, n.o.p. in or around the period of August 30 to March 28. When the harvest is well underway and sufficient volume is available the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can be applied for 46 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on yellow onions are free B.P. (British Preferential) and 1.5 cents per pound, but not less than 15 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland:
B.C. Coast Vegetable Co-operative Association
13631 Vulcan Way
Richmond, B.C.
Phone: 278-6234

Vancouver Island:
Island Vegetable Co-operative Association
2805 Quesnel
Victoria, B.C.
Phone: 382-8203

Nanaimo Branch
6451 Portsmouth Road
Lantzville, B.C.
Phone: 390-2312

Interior:
Interior Vegetable Marketing Agency Ltd.
2908-31st Avenue
Vernon, B.C.
Phone: 545-5100
545-0694

PARSLEY

Commercial production of parsley in B.C. is largely concentrated in the Lower Mainland. Provincial production is small although market potential exists. Parsley is an unregulated crop and is sold mainly through the B.C. Lower Mainland Farmer's Co-operative although a small percentage is sold through roadside stands.

Nutrition

Parsley has a very high content of vitamins A and C as well as calcium. It also has generous amounts of iron, phosphorus, potassium and niacin.

Merchandising and Display

Parsley is usually sold in small bunches since consumers do not use large quantities. It should be refrigerated at all times and sprinkled occasionally to maintain its freshness.

Uses

Parsley can be used either as a garnish or a flavouring for soups, stews, gravies, sauces, stuffings, and omelets.

Storage Recommendations for Parsley

Temperature: 32 F (0 C)
Relative Humidity: 90-95%

Parsley will keep for 7-10 days at low temperature and high humidity but it is not usually commercially stored.

Grade Standards in Effect for Parsley

There are no grade standards presently in effect for parsley.

Pack Sizes

Canadian: cartons - waxed, in bunches, 1 doz., 10 doz.
American: cartons - waxed, in bunches, 1 doz., 5 doz.
jumbo crates - 5 doz. bunches
bushel baskets - 5 doz. bunches

Estimated Number of Cases per Trailer Load

Parsley - is not shipped in straight loads.

Fresh Parsley Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	Nov	Dec - May	Jun
B.C.	May	Jun - Oct	Nov

Tariff Schedule

Canadian tariffs are usually applied to imported parsley in or around the period of June 17 to October 7. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can be applied for 16 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on parsley are free B.P. (British Preferential), 1.75 cents per pound, but not less than 10 percent ad valorum M.F.N. (Most Favoured Nation) and 5.25 cents per pound, but not less than 30 percent ad valorum General Tariff.

Principal Suppliers in B.C. by Area

Lower Mainland:
B.C. Lower Mainland Farmer's Co-operative
272 East Pender Street
Vancouver, B.C.
Phone: 683-7024

PARSNIPS

Parsnips are produced in varying amounts in all three regions of B.C. with approximately half the total production occurring in the Lower Mainland. There is some production on Vancouver Island and a small percentage in the Interior. Parsnips are a regulated commodity and as such, sales of parsnips are through the B.C. Coast Vegetable Co-operative, the Island Vegetable Co-operative, the Port Potato Company and the Interior Vegetable Marketing Agency. Production has remained fairly stable although a market potential exists.

Varieties

Model, Cobham Improved Marrow and Gladiator are three varieties which are grown in B.C.

Nutrition

Parsnips are a valuable nutrient source since they are relatively high in phosphorus, iron, sodium, potassium and vitamin A and contain a number of other valuable nutrients in lesser quantities.

Merchandising and Display

Parsnips are generally sold in both packages and bulk since consumers have been shown to prefer to have a choice. They should be displayed with other cooking vegetables, refrigerated and those not in packages should be sprinkled lightly to prevent moisture loss.

Uses

Parsnips are good accompaniments for roast pork, spare ribs, beef, duck and goose. They should be cooked by steaming them in their skins until tender and then should be peeled and slitted lengthwise and the core should be scooped out if it is large. They can then be mashed, sliced and glazed, pan-fried, creamed or french-fried. Parsnips can also be cooked along side a roast and basted regularly with the juices from the meat.

Storage Recommendations for Parsnips[1]

Temperature: 32 F (0 C)
Relative Humidity: 95%

Parsnips are usually handled like carrots and their storage life is 2-4 months at 32 F (0 C) and high relative humidity. They are topped at harvest in the fall and can be stored in bulk piles, but more often, they are stored in bulk bins, boxes, or other containers. Perforated polyethylene liners in the containers help prevent moisture loss. The main storage problems with parsnips are a root discolouration for which there is no known cause or control and their tendency to shrivel as a result of moisture loss. The shriveling can be controlled by packing in damp sphagnum moss or other moisture-holding material. Parsnips have been successfully waxed for marketing, but they are usually sold unwaxed. Parsnips will recover from light freezing but they should be protected from frost.

Grade Standards in Effect for Parsnips[2]

55. The grade for parsnips are Canada No. 1, Canada No. 1 - Cut Crowns and Canada No. 2.

Canada No. 1 Grade

56. Canada No. 1 is the grade name for parsnips that
(a) have similar varietal characteristics;
(b) are firm and not woody in texture;
(c) are not trimmed into the crown but are so trimmed that the length of the tops of 75 percent of the parsnips does not exceed 1/2 inch and the length of the tops of the other parsnips does not exceed 1 inch;
(d) are fairly smooth;
(e) are free from secondary rootlets that materially affect the appearance of the parsnips;
(f) are not turnip-shaped or so forked or misshapen as to materially affect the appearance of the parsnips;
(g) are reasonably clean;
(h) are free from decay;
(i) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (h), that
    (i) materially affects the appearance, edibility or shipping quality of the parsnips, or
    (ii) cannot be removed without a loss of 5 percent by weight of a parsnip;
(j) have a minimum length of 5 inches, and
    (i) a minimum diameter of 1 inch and a maximum diameter of 3 inches,
    (ii) a minimum diameter of 1 3/4 inches or greater if packed in a package marked with the words "1 3/4 inches and up", or as the case may be, or
    (iii) a minimum diameter of 1 inch and
        (A) conform to a size range marked on the package in which they are packed,
        (B) are packed in a transparent package, or
        (C) are in bulk display in a retail store;
(k) do not, when packed as prepackaged products, vary more than 1 1/2 inches in diameter; and
(l) are properly packed.

Canada No. 1 - Cut Crowns Grade

57. Canada No. 1 - Cut Crowns is the grade name for parsnips that have had their crowns or shoulders removed but that in all other respects meet the requirements of Canada No. 1 grade.

Canada No. 2 Grade

58. Canada No. 2 is the grade name for parsnips that
(a) have similar varietal characteristics;
(b) are firm and not woody in texture;
(c) are trimmed so that the tops do not exceed 1 inch in length but are not trimmed into the crown;
(d) are not so badly forked or misshapen that the appearance is seriously affected;
(e) are free from decay;

(f) are free from any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (b) to (e), that

(i) seriously affects the appearance, edibility or shipping quality of the parsnips, or

(ii) cannot be removed without a loss of more than 10 percent by weight of a parsnip;

(g) have a minimum diameter of 1 inch and minimum length of 4 inches; and

(h) are properly packed.

General Tolerances

59. Notwithstanding anything in these Regulations, in the grading of parsnips not more than

(a) 4 percent of the parsnips by weight may be below the prescribed or designated minimum size,

(b) 8 percent of the parsnips by weight may exceed the prescribed or designated maximum size,

(c) 10 percent of the packages, where the parsnips are packed as prepackaged products, may contain parsnips that exceed the permitted size variation prescribed by paragraph 56(k),

(d) 2 percent of the parsnips by weight may be affected by decay, and

(e) 6 percent of the parsnips by weight may have grade defects other than those referred to in paragraphs (a) to (c) but including that referred to in paragraph (d),

and still meet the grade standards for a grade.

Pack Sizes

Canadian: medium - bag, 25 lbs.
American: case, 20 lbs.
sack, 25 lbs.

Estimated Number of Cases per Trailer Load

Parnsips - 850 cases per trailer load.

Fresh Parsnip Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.	Aug	Sep - Jan	Feb
California	Dec	Jan - Jul	Aug
Oregon	Dec	Jan - Apr	May

Tariff Schedule

Current tariff rates on imported parsnips are free twelve months of the year.

Principal Suppliers in B.C. by Area

Lower Mainland:
B.C. Coast Vegetable Co-operative Association
13631 Vulcan Way
Richmond, B.C.
Phone: 278-6234

Vancouver Island:
Island Vegetable Co-operative Association
2805 Quesnel
Victoria, B.C.
Phone: 382-8203

Nanaimo Branch
6451 Portsmouth Road
Lantzville, B.C.
Phone: 390-2312

Port Potato Company
Bamfield Road
Cox Lake, B.C.
Phone: 723-7000

Interior:
Interior Vegetable Marketing Agency Ltd.
2908-31st Avenue
Vernon, B.C.
Phone: 545-5100
545-0694

PEAS

By far the majority of the peas produced in B.C. are for the processing market. For this reason, the majority of production takes place in the Lower Mainland and only small amounts are produced on Vancouver Island and in the Interior. Contracts for processing peas are negotiated on the grower's behalf by the Fraser Valley Pea Grower's Association. Sales of fresh peas are either through roadside stands or are direct to wholesaler. Pea production is relatively steady although market potential exists.

Varieties

Some of the varieties which are grown in B.C. are Laxton's Progress, Progress No. 9, Onward and Sugar Snap.

Nutrition

Peas are a good source of protein, calcium, phosphorus, iron, potassium, vitamin A, thiamine, niacin and riboflavin.

Merchandising and Display

Peas should be kept cold and moist and should have good air circulation. If they are not cooled rapidly after harvest they are in danger of having their sugar converted to starch. For this reason, a rapid turnover of stock is desirable to maintain high quality. Peas can be displayed in bulk or in packages.

Uses

Peas can be served plain, with butter or creamed. They can be used in soups, stews, stir-fry dishes, salads, or in combination with other dishes. They should be boiled for a few minutes and a sprig of mint or a small onion can be added to the water to enhance the flavour.

Storage Recommendations for Peas[1]

Temperature: 32 F (0 C)
Relative Humidity: 95%

This crop is similar to corn in that the most likely form of quality deterioration is through normal reactions involving the conversion of sugars to starch. If possible, peas should be stored in the pod and cooled immediately after harvest by icing or immersion in ice water. Stored at 32 F (0 C), they may be held 1-2 weeks. At 40 F (4.4 C) their storage life is about 3-4 days. Processing plants may have to store shelled, green peas. The storage life of peas in this form is much reduced, but it can be extended by prompt cooling and washing to remove surface juice.

Grade Standards in Effect for Peas

There are no grade standards presently in effect for peas.

Pack Sizes

Canadian: case, 20 lbs.
American: case, 10 lbs., 20 lbs., 25 lbs., 30 lbs.

Fresh Pea Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	Mar	Apr - Jul	Aug
Mexico	Dec	Jan - Mar	Apr
B.C.	Jun	Jul	Aug

Tariff Schedule

Canadian tariffs are usually applied to imported peas n.o.p. in or around the period of June 17 to September 9. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can be applied for 12 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on parsley are free B.P. (British Preferential) and 2 cents per pound, but not less than 10 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland: (75 acres +)
Processed - Anderson's Sod Farm Ltd. - Mission, 826-2383
Berryland Canning Co. Ltd. - Sardis, 858-7151
Empress Foods Ltd. - Clearbrook, 534-7646
Franks Farms Ltd. - Chilliwack, 794-7150
Fraser Valley F.F. - Chilliwack, 795-7281
Gulfview Farms Inc. - Delta, 946-4329
H & H Farms - Aldergrove, 856-9389
J. Hougen - Abbotsford, 859-8280
A. Krampitz - Chilliwack, 792-6267
Rai & Kallu Farms - Delta, 943-6511
S. Reynolds - Delta, 946-7152
Sandhu Farms Ltd. - Abbotsford, 853-8755
H.R. Savage & Sons - Delta, 946-2283
Seabird-Wigand - Agassiz, 796-2457
Snowcrest Packers Ltd. - Abbotsford, 859-4881
Springbank Dehyd. Ltd. - Chilliwack, 794-7118
Sumas River Growers Ltd. - Abbotsford, 859-7089
Townline Growers Ltd. - Abbotsford, 859-5907
J.B. Zellweger - Delta, 946-2460

Vancouver Island: no production

Interior: no production

GREEN PEPPERS

Green peppers have suffered a gradual decline in production in recent years due to growing competition from imports, rising costs of production, fluctuating prices and variable weather. Green pepper production is split between the Lower Mainland and the Interior. The majority of the crop is sold through roadside stands and the remainder is shipped to wholesalers.

Varieties

Liberty Bell, Ace, Emerald Giant and Ma Bell are all varieties of green peppers which are currently grown in B.C.

Nutrition

Green peppers are very high in vitamin C and have generous amounts of potassium and vitamin A. They are also very low in calories.

Merchandising and Display

Green peppers have a relatively short shelf-life and should be kept cool but considerably above 32 F (0 C) or they will be susceptible to chilling injury. The bright, shiny green sharpens their appeal and they are very effective in colour contrast displays.

Uses

Green peppers are good either raw or cooked. They make a tasty addition to salads, are good as a raw snack and can be stuffed with a variety of meat or vegetable mixtures for a main dish.

Storage Recommendations for Green Peppers

Temperature: 45-50 F (7.2-10 C)
Relative Humidity: 85-90%

Peppers have a storage life of 8-10 days at 45-50 F (7.2-10 C). Red colour and decay develop rapidly at higher temperatures after a few days at 32-36 F (0-2.2 C). Low temperature injury in the form of surface pitting and decay will cause serious damage upon removal of the peppers to room temperature. Packaging in perforated polyethylene bags and waxing extend storage and shelf life of green peppers.

Grade Standards in Effect for Green Peppers

There are no grade standards presently in effect for green peppers.

Pack Sizes

Canadian: cartons, 30 lbs.
American: cartons - 1 1/9 bushel, 28 lbs.
- 30 lbs.
bags - 5 lbs.

Estimated Number of Cases per Trailer Load

Peppers - 1300-1400 cases per trailer load.

Fresh Pepper Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
Mexico	Nov	Dec - May	Jun
California	Apr	May - Dec	Jan
Texas		May - Jun Nov - Jan	
Washington		Aug - Oct	Nov

Tariff Schedule

Canadian tariffs may be applied to imported peppers during the period of August 8 to October 31. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can be applied for 12 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on peppers are free B.P. (British Preferential) and 2 cents per pound, but not less than 10 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland: (1 acre +)
  Field - Kondolay Bros. Farms Ltd. - Clearbrook, 853-9022

Vancouver Island: no production

Interior: (3 acres +)
  Field - Riclaur Farms Ltd. - Oliver, 495-2778
          Sumac Farms - Okanagan Falls, 497-5100

POTATOES

Potatoes are produced in varying quantities and varieties throughout the province. The majority of B.C. production is in the Lower Mainland. Vancouver Island, the Okanagan and Kootenay areas also have significant commercial production. Production has been declining due to relocation of the processors, increasing competition from Washington and an increasing cost of production. Potatoes are a B.C. Vegetable Marketing Commission regulated product and sales are handled through the B.C. Coast Vegetable Co-operative, the Island Vegetable Co-operative, the Port Potato Company and the Interior Vegetable Marketing Agency. All potatoes grown north of the 53rd parallel have been deregulated. Most of the potatoes grown in the Pemberton and Quesnel areas are certified seed potatoes.

Varieties

There are several varieties of potatoes grown in B.C. but some of the main varieties are Warba, Norland, Norgold Russet, Kennebec, Norchip, Nooksack and Russet Burbank.

Nutrition

Potatoes are a valuable source of many nutrients and contain generous amounts of nitrogen, iron, magnesium, vitamin C, thiamine and niacin. They are also valued for their carbohydrate content, are relatively low in calories and provide a supplementary source of protein.

Merchandising and Display

Potatoes can be sold either by bulk or in bags. It is advisable to have both since consumers like to have a choice. Potatoes should be displayed on dry, unrefrigerated racks which should be cleaned regularly to avoid the accumulation of dirt and debris. The supplies should be rotated and broken or rotting potatoes removed at once. Greening of the potatoes while on the rack can be avoided by limiting their exposure to light.

Uses

Potatoes are extremely versatile and can be used in many different ways. They can be baked, roasted, boiled, mashed, pan-fried, french-fried, creamed, hash-browned, curried, scalloped and used in salads, stews, soups, pancakes, pastries, souffles, chowders, croquettes and dumplings.

Storage Recommendations for Potatoes[1]

Temperature: see below
Relative Humidity: 85-90%

Early-crop potatoes are harvested before they reach full maturity. They are used for immediate consumption and are unsuitable for long storage. However, this crop can be kept for several weeks if it is in sound condition. If intended for table use, potatoes can be stored at 50 F (10 C) but if they are held for processing, particularly for chipping, storage temperatures of 60-70 F (15.6-21.1 C) are better. Whatever the temperature, the relative humidity should be 85-90 percent.

Late Crop

Temperature: see below
Relative Humidity: 85-90%

Most potatoes are harvested at the 'late-crop' stage. Time of harvest is determined by the maturity of the potatoes and the possibility of damage by low temperatures in the field. Maturity is difficult to define, but the objective is to allow potatoes to reach maximum dry matter content (high specific gravity) and to induce toughening or 'setting' of the skin. These conditions are most nearly achieved when the vines have been dead for about 2 weeks. Usually the tops have to be killed either mechanically or by chemicals, or in irrigated areas, by water restriction. Top killing by chemical means is recommended when late blight infection is suspected.

Potatoes are often handled too roughly. This causes damage that results in several forms of loss, including loss of moisture, and increased susceptibility to disease and browning disorders. Injured and disease-infected potatoes should not be stored.

Curing of potatoes before placing them in storage is an extremely important operation. The objective is to improve their storage properties by making their skin firmer and tougher. This reduces subsequent moisture loss, increases resistance to disease and aids in recovery from injury. The actual physiological processes involved are suberization and wound periderm formation. The first process is completed in about 2 days at 68 F (20 C) but the second process is considerably slower. High temperatures and humidities are required for both processes. Curing is virtually stopped at temperatures of 46 F (7.8 C) or lower. It requires a period of 10-14 days at temperatures of 56-60 F (13.3-15.6 C) and very high (95%) relative humidity. However, if the presence of late blight is suspected, the curing period may have to be shortened to avoid accelerated development of the disease.

The physiology of the potato is influenced markedly by temperature. Following curing, optimum storage temperatures are determined by the ultimate use of the crop, duration of storage and sprout inhibition treatment. Temperatures of 40 F (4.4 C) and higher induce sprouting, whereas temperatures below 50 F (10 C) induce sugar accumulation and temperatures below 36 F (2.2 C) may cause low-temperature injury. These factors dictate the following temperature recommendations:

SEED STOCK: 36-38 F (2.2-3.3 C); storage life, 7-8 months or longer.
TABLE STOCK: 45-50 F (7.2-10 C) for short storage or until sprouting is imminent. The same temperatures can be used for long storage if sprout inhibitors are used, otherwise 39 F (3.9 C) is required for long storage. Storage life is 4-9 months, depending on variety.
STOCK FOR PROCESSING INTO POTATO CHIPS: 50 F (10 C) in combination with sprout inhibitors is best. If stored at 40 F (4.4 C), costly reconditioning is necessary to prevent browning.
STOCK FOR PROCESSING INTO FRENCH FRIES: 40-50 F (4.4-10 C) can be used because browning is not quite as critical as with chips.

Potatoes should be stored at a high relative humidity (85-90%) at all times. This is particularly true at temperatures of 45 F(7.2 C) and higher, when shrivelling is most likely to occur.

Sprout inhibitors perform an important function in storage by permitting storage at 50 F (10 C), thus avoiding the formation of sugars and the need for reconditioning. Maleic hydrazide (amine form) applied to the vines, in the field 2 weeks after full bloom, at the rate of 6 1/2 pints of MH-amine in 80-120 gallons per acre (3 litres in 880-1,320 litres/ha), has been found very effective. Isopropyl N-(3-chlorophenyl) carbamate (CIPC) can be applied satisfactorily in storage if all cuts and bruises on the potatoes are thoroughly healed before application. Gamma irradiation, at a level of 8,500 rads, using a cobalt-60 source, has been found effective. A possible increase in sugars as a result of irradiation is a disadvantage which, however, has been shown to be somewhat temporary. A method found highly satisfactory in Britain and elsewhere is the use of a nonyl alcohol (3,5,5-trimethyl-hexan-1-ol), which is applied directly to the stored potatoes by evaporating the alcohol into the ventilation system at a concentration of 1 ounce per 1000 cubic feet at an air flow rate of 5 cubic feet per minute per (long) ton of potatoes. **(Note: Before any chemicals are employed, the legal aspects of their use should be considered.)**

Most potatoes are stored in common, air-cooled storage although refrigeration sometimes is used, mainly as an auxiliary source of cooling. Uniform air and temperature distribution are essential in maintaining good storage conditions. Otherwise cold areas on the walls and ceiling of a storage room or in the stack itself may develop wet spots. If potatoes are piled in bins, the potatoes should not be higher than 15 feet (4.5 m) and the top of the pile should be kept level. A ridge at the top of a pile often provides conditions that lead to the formation of a wet spot. Although bags, boxes and other containers are still used, the trend is toward bulk boxes for economy in handling.

Light should be excluded from potato storages because it causes the production of chlorophyll (which gives the potatoes a green colour) and also the formation of solanine, a bitter toxic compound.

The ventilation system and the insulation of storage buildings should provide adequate protection against low temperatures, particularly freezing during the winter. Conversely, admitting air that is at a higher temperature than the potatoes is likely to cause condensation (sweating). Ventilation should be sufficient to prevent the accumulation of carbon dioxide, which can cause increase in sugar content or possibly, blackheart under severe conditions.

The potato processing industry and particularly potato chip manufacturers, are making special demands for potato storage quality. Dry-matter content, reducing sugar content and texture characteristics are being checked very closely. The proper selection of varieties, careful handling and adherence to proper storage management are the main factors contributing to high processing quality. If reducing sugars do accumulate, a reconditioning procedure consisting of exposure to 60-70 F (15.6-21.1 C) for a week or longer permits them to be converted to starch or other compounds, or used in respiration. However, this procedure is often not effective for reasons not as yet completely understood. Soaking or washing the raw chips in water has been found effective. Varieties having a reputation for being suitable for reconditioning are Kennebec, Russet Rural and Rural New Yorker, but even these varieties fail to respond to reconditioning on rare occasions.

Grade Standards in Effect for Potatoes[2]

60. The grades for potatoes are Canada No. 1, Canada No. 1 Large, Canada No. 1 Small and Canada No. 2.

Canada No. 1 Grade

61. (1) Canada No. 1 is the grade name for potatoes that
(a) have similar varietal characteristics;
(b) are firm;
(c) are not materially pointed, materially dumb-bell shaped or otherwise materially deformed;
(d) have skins that will not loosen readily during ordinary handling;
(e) have not more than 10 percent of a lot that has more than 10 percent of the surface flesh exposed;
(f) are reasonably clean;
(g) are free from dumb-bells, specimens from which knobs have been removed, blight, sprain, bacterial ring rot or other decay;
(h) are free from damage;
(i) have
    (i) in the case of round varieties, a minimum diameter of 2 1/4 inches and maximum diameter of 3 1/2 inches, and
    (ii) in the case of long varieties, a minimum diameter of 2 inches and a maximum diameter of 3 1/2 inches except in the case of specimens 3 1/2 inches or more in length, which may have a minimum diameter of 1 3/4 inches, provided that in either case 60 percent of the specimens have a diameter of at least 2 1/4 inches; and
(j) are properly packed.

(2) In this section, "free from damage" means the potatoes are free from
(a) scab that
    (i) is pitted and
        (A) affects an aggregate area per potato of more than 1/4 inch in diameter, or
        (B) affects more than 5 percent of the potatoes in the lot,
    (ii) affects more than 5 percent of the surface area of an individual potato, or
    (iii) affects more than 50 percent of the potatoes in the lot;
(b) hollow heart that exceeds 1/4 inch in length or width or is discoloured;
(c) sunburn that
    (i) affects more than 5 percent of the surface area of an individual potato, or
    (ii) penetrates the flesh of a potato to a depth of more than 1/4 inch;
(d) greening that
    (i) affects more than 15 percent of the surface area of an individual potato, or
    (ii) penetrates the flesh of a potato to a depth that would not be removed by ordinary peeling;
(e) wireworm or grass root holes that
    (i) exceed two per potato,
    (ii) individually exceed 1/2 inch in depth or in the aggregate exceed 3/4 inches in depth, or
    (iii) affect more than 10 percent of the potatoes in the lot;

(f) sprouts that are at shipping point exceed 1/2 inch in length or at a place other than shipping point exceed 1 inch in length when more than 10 percent of the potatoes in any lot are so affected;
(g) any injury or defect or a combination thereof that materially affects the appearance of the potato, including healed-over flesh, rhizoctonia or silver scurf; and
(h) any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (a) to (g), that
    (i) affects the flesh of the potato and cannot be removed without a waste of more than 5 percent by weight of a potato, or
    (ii) affects the edibility or shipping quality of the potato.

Canada No. 1 Large Grade

62. Canada No. 1 Large is the grade name for potatoes that have a minimum diameter of 3 inches and a maximum diameter of 4 1/2 inches but that in all other respects comply with the requirements of Canada No. 1 grade.

Canada No. 1 Small Grade

63. Canada No. 1 Small is the grade name for potatoes that have a minimum diameter of 1 1/2 inches and a maximum diameter of 2 1/4 inches but that in all other respects comply with the requirements of Canada No. 1 grade.

New Potatoes

64. (1) Notwithstanding section 61 and subject to subsection (2),
(a) new potatoes of a round variety shipped on or before September 15th in any year that do not comply with paragraphs 61(1)(d), (e) and (i), and
(b) new potatoes of a long variety,
    (i) shipped on or before June 30th in any year that do not comply with paragraphs 61(1)(d), (e) and (i), and
    (ii) shipped after June 30th and on or before September 15th in any year that do not comply with paragraphs 61(1)(d), (e) and (i),
but that in all other respects comply with the requirements of Canada No. 1 grade shall be deemed to meet the requirements of Canada No. 1 grade.

(2) New potatoes of Canada No. 1 grade shall meet the size requirements set out in paragraph 61(1)(i) except that those potatoes otherwise required to be of a minimum diameter of 2 inches or 2 1/4 inches may be of a minimum diameter of 1 7/8 inches.

Canada No. 2 Grade

65. (1) Canada No. 2 is the grade name for potatoes that
(a) have similar varietal characteristics;
(b) are reasonably firm;
(c) are not seriously pointed, seriously dumb-bell shaped or otherwise seriously deformed;
(d) are free from dumb-bells, specimens from which knobs have been removed, sprain, bacterial ring rot, or other decay;
(e) are free from damage;
(f) have a minimum diameter of 1 3/4 inches and a maximum diameter of 4 1/2 inches;

(g) have a diameter of not less than 2 inches in at least 75 percent of the lot;
(h) have not more than one-third by weight of the lot seriously affected by dirt; and
(i) are properly packed.

(2) In this section, "free from damage" means that potatoes are free from
(a) scab that
  (i) is pitted and cannot be removed without a waste of more than 5 percent by weight of a potato, or
  (ii) affects more than 25 percent of the surface area of an individual potato;
(b) hollow heart that exceeds 1/4 inch in length or width or is discoloured;
(c) blight that
  (i) is not dry, or
  (ii) is dry but cannot be removed without a waste of more than 5 percent by weight of a potato;
(d) wireworm or grass root injury that affects the flesh of the potato and cannot be removed without a waste of more than 5 percent by weight of a potato;
(e) sprouts that at shipping point exceed 1/2 inch in length or at a place other than shipping point exceed 1 inch in length when more than 10 percent of the potatoes in any lot are so affected; and
(f) any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (a) to (e), that
  (i) affects the flesh of the potato and cannot be removed without a waste of more than 10 percent by weight of a potato, or
  (ii) seriously affects the appearance, edibility or shipping quality of a potato.

General Tolerances

66. (1) Notwithstanding anything in these Regulations, in the grading of Canada No. 1 grade, Canada No. 1 Large grade and Canada No. 1 Small grade potatoes not more than
(a) 5 percent of the potatoes by weight may be below the minimum size,
(b) 5 percent of the potatoes by weight may exceed the maximum size,
(c) 3 percent of the potatoes by weight in the case of Canada No. 1 grade and 5 percent of the potatoes by weight in the Case of Canada No. 1 Large grade may be affected by hollow heart,
(d) 1 percent of the potatoes by weight may be affected by decay,
(e) 5 percent of the potatoes by weight may have grade defects other than those referred to in paragraphs (a) to (e),
and still meet the grade standards for a grade.

(2) Notwithstanding anything in these Regulations, in the grading of Canada No. 2 grade potatoes not more than
(a) 5 percent of the potatoes by weight may be below the minimum size,
(b) 5 percent of the potatoes by weight may exceed the maximum size,
(c) 10 percent of the potatoes by weight may be affected by hollow heart,
(d) 1 percent of the potatoes by weight may be affected by decay,
(e) 5 percent of the potatoes by weight may have grade defects, other than those referred to in paragraphs (a), (b) and (c) but including that referred to in paragraph (d), and
(f) 15 percent of the potatoes by weight may have grade defects of any king including those referred to in paragraphs (a) to (e),
and still meet the grade standards for a grade.

Pack Sizes

Canadian:	sacks, 50 lbs. cases, 50 lbs. bags, 15 lbs. bales, 10 x 5 lbs., 5 x 10 lbs.
American:	sacks, 40 lbs., 50 lbs., 100 lbs. cases, 50 lbs. bales, 10 x 5 lbs., 5 x 10 lbs.

Estimated Number of Cases per Trailer Load

Potatoes - 900 cases per trailer load.

Potato Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.		Jan - Dec	
Washington		Jan - Dec	
California		Jan - Dec	

Tariff Schedule

Current tariff rates for potatoes, n.o.p., are 35.6 cents per cwt B.P.(British Preferential) and M.F.N. (Most Favoured Nation) on a yearly declining schedule to 35 cents in 1987 and 75 cents per cwt General tariff. These rates are in effect 12 months of the year.

Principal Suppliers in B.C. by Area

Lower Mainland:
B.C. Coast Vegetable Co-operative Association
13631 Vulcan Way
Richmond, B.C.
Phone: 278-6234

Vancouver Island:
Island Vegetable Co-operative Association
2805 Quesnel,
Victoria, B.C.
Phone: 382-8203

Nanaimo Branch
6451 Portsmouth Road
Lantzville, B.C.
Phone: 390-2312

Interior:
Interior Vegetable Marketing Agency Ltd.
2908-31st Avenue
Vernon, B.C.
Phone: 545-5100
545-0694

RADISHES

Radish production in B.C. is concentrated in the Lower Mainland with only a small proportion of the total production being produced on Vancouver Island and in the Interior. Radish production has remained stable in recent years and is not expected to undergo major changes. Radishes are an unregulated crop, most of the commodity is marketed through the B.C. Lower Mainland Farmer's Co-operative, a producer owned co-operative formed by several of the Chinese growers in the Burnaby, Richmond and Surrey areas. Radishes not marketed through the Co-operative are sold through roadside stands or direct to wholesalers.

Varieties

Cherry Belle and Caval Rondo are both varieties of radish which are commercially grown in B.C.

Nutrition

Radishes are not only low in calories but also are a good source of potassium, magnesium and vitamin C.

Merchandising and Display

Both bunched and packaged radishes should be displayed on a refrigerated rack and bunched radishes should be iced or sprinkled regularly. A rapid turn-over is desirable to maintain high quality stock. Radishes should be displayed with other salad items and their bright colour can be used to attract attention.

Uses

Radishes can be eaten raw out of hand or in salads or can be steamed or stuffed as hors d'oeuvres.

Storage Recommendations for Radishes[1]

Temperature: 32 F (0 C)
Relative Humidity: 90-95%

Spring radishes are usually marketed in the bunched form with tops retained. There is a trend, however, toward marketing topped spring radishes in plastic bags. Spring radishes have a storage life of about 14 days when held at 32 F (0 C) and high relative humidity. Their fresh appearance and marketability are improved by hydrocooling and ample icing before and during transit. Winter or large radishes will keep in good condition for 2-4 months under the storage conditions recommended for spring radishes. Radishes are susceptible to Bacterial Black Spot, Downy Mildew, Rhizoctonia Root Rot and freezing injury in storage.

Grade Standards in Effect for Radishes

There are presently no grade standards in effect for radishes.

Pack Sizes

Canadian:	bunched - cases, 12's, 24's, 48's cello packs - 30 x 6 oz.
American:	bunched - cases, 12's, 48's cello packs - 30 x 6 oz.

Estimated Number of Cases per Trailer Load

Radishes - 900 cases per trailer load.

Fresh Radish Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	Oct	Nov - May	Jun
B.C.	Apr	May - Oct	Nov

Tariff Schedule

Canadian tariffs are usually applied to imported radishes in or around the period of May 17 to November 15. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can be applied for 26 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on radishes are free B.P. (British Preferential), 1 cent per pound, but not less than 10 percent ad valorum M.F.N. (Most Favoured Nation) and 3 cents per pound, but not less than 30 percent ad valorum General tariff.

Principal Suppliers in B.C. by Area

Lower Mainland:
B.C. Lower Mainland Farmer's Co-operative
272 East Pender Street
Vancouver, B.C.
Phone: 683-7024

Vancouver Island: minor production

Interior: minor production

RHUBARB

B.C. rhubarb production is centered in the Lower Mainland with only small amounts of it grown in other regions. The greater part of the rhubarb produced in B.C. is processed and the remaining part is sold mainly through wholesalers with only a small proportion sold through roadside stands. Rhubarb is an unregulated commodity and growers negotiate their own contracts with the processors.

Varieties

German Wine, Macdonald and Crimson are three varieties which are grown commercially in B.C.

Nutrition

Rhubarb is low in calories and contains vitamins A and C as well as potassium, magnesium and calcium.

Merchandising and Display

Rhubarb should be dipped in cold water before it is put on display to help maintain its freshness. It should be displayed on a refrigerated rack and sprinkled at least twice each day.

Uses

Only the stalks of rhubarb are suitable for human consumption and they can be baked or stewed and made into pies, tarts, sauces, puddings, jams and jellies, punch, juice or wine.

Storage Recommendations for Rhubarb[1]

Temperature: 32 F (0 C)
Relative Humidity: 90-95%

Rhubarb stalks, if fresh and in good condition, may be stored for 2-3 weeks. Bunches should be packed in crates, which are stacked to allow ample air circulation on all sides; otherwise, there is a danger of heating and mold growth. Grey mold rot, Anthracnose, Crown and Foot rots and Stemspot are all storage disorders to which rhubarb is susceptible.

Grade Standards in Effect for Rhubarb[2]

60. The grades for field rhubarb are Canada No. 1 and Canada Domestic.

Canada No. 1 Grade

61. (1) Canada No. 1 is the grade name for field rhubarb that
(a) is fresh, not wilted and well trimmed;
(b) has not less than 1/3 of each stalk of a characteristic red colour;
(c) is free from stalks pulled from the seed stem, disease, insects of other pests, dirt, trimmings and other foreign material;
(d) has a minimum diameter of 3/4 inches or a minimum circumference of 2 1/2 inches at or near the butt;
(e) has a minimum length of 10 inches; and
(f) is properly packed.

(2) In this section, "well-trimmed" means that the butt has not been cut, loose skin has been removed and the leafy portion has been trimmed to a length not exceeding 1 inch.

Canada Domestic Grade

62. Canada Domestic is the grade name for field rhubarb that is free from decay.

General Tolerances

63. Notwithstanding anything in these Regulations, in the grading of field rhubarb not more than
(a) 1 percent of the rhubarb by count may be affected by decay,
(b) 5 percent of the rhubarb by count may have the same grade defect, and
(c) 10 percent of the rhubarb by count may have grade defects of any kind including those referred to in paragraphs (a) and (b),
and still meet the grade standards for a grade.

Pack Sizes

Canadian: case, 20 lbs.
American: case, 15 lbs., 20 lbs.

Fresh Rhubarb Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.		Apr - May	Jun
Washington		Mar - Apr	

Tariff Schedule

Canadian tariffs are usually applied to imported rhubarb in or around the period of April 15 to July 8. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can be applied for 12 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on rhubarb are free B.P. (British Preferential) and 1 cent per pound, but not less than 5 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland:

RUTABAGAS

Rutabagas are often confused with turnips, a closely related relative. The main difference is that rutabagas have yellow flesh whereas turnips have white flesh and rutabagas are more nutritious than turnips.

Rutabagas are grown in all regions of B.C. but production is concentrated in the Lower Mainland. B.C. rutabagas supply a large part of the B.C. market. They are regulated by the B.C. Vegetable Marketing Commission and are sold through the B.C. Coast Vegetable Co-operative, the Island Vegetable Co-operative and the Interior Vegetable Marketing Agency. A small percentage of rutabagas are sold through roadside stands.

Varieties

Laurentian and York are two of the major commercial rutabaga varieties grown in B.C.

Nutrition

Rutabagas are low in both calories and sodium and contain useful amounts of vitamins A and C as well as potassium and magnesium.

Merchandising and Display

Rutabagas may be displayed either on a refrigerated or on a common rack since they keep very well. They are often waxed which adds to their appearance. They should be stocked in sufficient quantity to attract attention and preparation suggestions are useful for this purpose as well.

Uses

Rutabagas should be cut into small pieces before cooking to save energy and time and can be either boiled or roasted. They can then be mashed or added to other dishes. Rutabagas can also be french-fried, eaten raw or added to potato or other salads.

Storage Recommendations for Rutabagas[1]

Temperature: 32 F (0 C)
Relative Humidity: 90-95%

The Laurentian variety is most commonly grown and appears to be the most satisfactory for storage and the market. It can be kept in good condition up to 6 months at 32 F (0 C) and 90-95% relative humidity. There is a general tendency to disregard the need for careful handling during harvest operations. Those who practice careful handling, however, find that it pays off in the form of reduced rot and other injury during the storage period. The use of maleic hydrazide has been found to be effective in reducing sprouting when the crop is stored under less than optimum conditions. **(Important: Before using any chemicals refer to the legal regulations that apply to their use in your area).** The rutabaga is usually stored in bulk, but bulk bins are preferred.

This crop responds well to waxing. If properly waxed, rutabagas lose less moisture and are more attractive. This waxing procedure, used after storage, has contributed largely to the high international reputation of Canadian rutabagas.

Diseases and disorders which affect the marketing of rutabagas include Alternaria root rot, Black rot, Powdery mildew, Rhizoctonia root rot, Grey mold rot, Watery soft rot and boron deficiency.

Grade Standards in Effect for Rutabagas[2]

67. The grade for rutabagas is Canada No. 1.

Canada No. 1 Grade

68. (1) Canada No. 1 is the grade name for rutabagas that
(a) have similar varietal characteristics;
(b) are firm;
(c) are reasonably regular in contour and of length not more than 1 1/2 times the diameter;
(d) are trimmed so that
    (i) the tops do not exceed 3/4 inches and all green leafy growth has been removed, and
    (ii) secondary roots, rootlets and any objectionable part of the root has been removed;
(e) are not trimmed
    (i) on the upper half of the root, or
    (ii) deeply into the flesh on the lower half of the root so as to alter the general shape of the root or to materially detract from the appearance of the rutabaga;
(f) are free from insects and insect larva;
(g) are free from decay;
(h) are free from damage;
(i) have, when in a package,
    (i) a minimum and maximum diameter as marked on the package or on a tag attached thereto,
    (ii) a minimum diameter of 2 inches and a maximum diameter of 4 inches, and have the word "Small" marked on the package or on a tag attached thereto,
    (iii) until August 31st in each crop year a minimum diameter of 3 inches and a maximum diameter of 5 1/2 inches and after August 31st a minimum diameter of 3 1/2 inches and a maximum diameter of 5 1/2 inches, and have the words "Small Medium" marked on the package or on a tag attached thereto,
    (iv) a minimum diameter of 4 inches and a maximum diameter of 6 inches, and have the word "Medium" marked on the package or on a tag attached thereto, or
    (v) a minimum diameter of 5 inches and a maximum diameter of 7 inches and have the word "Large" marked on the package or on a tag attached thereto;
(j) except in the case of the Small Medium size, until August 31st in each crop year do not, when in a package, vary more than 2 inches in diameter; and
(k) are properly packed.

(2) In this section, "free from damage" means the rutabagas are free from
(a) growth cracks that
    (i) are discoloured or deep, or
    (ii) materially affect the appearance of a rutabaga;
(b) any injury or defect, other than those referred to in paragraph (a), that affects the appearance of the upper half of a rutabaga;
(c) external injury that affects more than 25 percent of the surface area of the lower half of a rutabaga; and

(d) any injury or defect or a combination thereof, other than those referred to in paragraphs (a), (b) and (c), that
(i) cannot be removed without wasting more than 5 percent of a rutabaga, or
(ii) materially affects the appearance, edibility or shipping quality of a rutabaga.

Waxed Rutabagas

69. The additional designation "waxed" may be used in connection with clean dry rutabagas that have been completely immersed in a wax solution.

General Tolerances

70. Notwithstanding anything in these Regulations, in the grading of rutabagas not more than
(a) 10 percent of the rutabagas by count may be below the designated minimum diameter and none of the rutabagas may be more than 1/2 inch below the minimum diameter,
(b) 10 percent of the rutabagas by count may exceed the designated maximum diameter and none of the rutabagas may exceed the maximum diameter by more than 1/2 inch,
(c) 5 percent of the rutabagas by count may be affected by decay, and
(d) 10 percent of the rutabagas by count may have grade defects other than those referred to in paragraphs (a) and (b) but including those referred to in paragraph (c),
and still meet the grade standards for a grade.

Pack Sizes

Canadian:	sack, 25 lbs., 50 lbs. poly bag, 10 lbs.
American:	sack, 25 lbs., 50 lbs. poly bag, 10 lbs.

Estimated Number of Cases per Trailer Load

Rutabagas - are not usually shipped in straight loads.

Rutabaga Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.	Jun - Jul	Aug - Mar	Apr
Oregon	Nov - Dec	Jan - May	Jun
California	May	Jun	Jul
Washington	Aug	Sep - Mar	Apr
Ontario		Apr - May	
Manitoba		Mar - Apr	

Tariff Schedule

Current tariff rates on imported rutabagas are free twelve months of the year.

Principal Suppliers by Area

Lower Mainland:
B.C. Coast Vegetable Co-operative Association
13631 Vulcan Way
Richmond, B.C.
Phone: 278-6234

Vancouver Island:
Island Vegetable Co-operative Association
2805 Quesnel
Victoria, B.C.
Phone: 382-8203

Nanaimo Branch
6451 Portsmouth Road
Lantzville, B.C.
Phone: 390-2312

Interior:
Interior Vegetable Marketing Agency Ltd.
2908-31st Avenue
Vernon, B.C.
Phone: 545-5100
545-0694

SPINACH

Spinach production in B.C. is concentrated in the Lower Mainland with only minor production on Vancouver Island and in the Interior. Production is relatively stable although there is some fluctuation due to weather. Spinach is an unregulated crop so sales are usually from grower direct to wholesaler but spinach grown in the Richmond area is mainly marketed through the B.C. Lower Mainland Farmer's Co-operative, a producer-owned co-operative formed by many of the Chinese growers. A small percentage of the spinach produced in sold through farm sales and roadside stands.

Varieties

Melody, Bonus, Northland and Avon are major commercial varieties of spinach which are grown in B.C.

Nutrition

Spinach is not only a good source of vitamins A and C but it also contains iron, potassium, magnesium and calcium and is low in calories.

Merchandising and Display

Spinach is a perishable item that should be refrigerated and rotation of stock and a rapid turn-over is desirable. It can be used in colour contrast displays to attract attention and recipe suggestions and ideas are a good method of increasing consumer awareness.

Uses

Spinach can be used raw in salads either on its own or in combination with lettuce. Spinach salad with bacon and hot oil dressing or spinach, onion, feta cheese and tomato with a garlic dressing are some ideas. Cooked spinach can be served, plain, dressed up with butter, bacon bits or sauteed onions for variety or can be added to other dishes such as quiche, soup, omelets and stir-fry dishes.

Storage Recommendations for Spinach[1]

Temperature: 32 F (0 C)
Relative Humidity: 90-95%

Spinach is usually stored for only short periods. It should keep fairly well for 10-14 days after being cut. If crushed ice is used in the packages, this period can be extended somewhat. The main storage diseases of spinach are Bacterial soft rot, Downy mildew and White rust.

Grade Standards in Effect for Spinach

There are no grade standards presently in effect for spinach.

Pack Sizes

Canadian: carton, 2 dozen bunches
American: carton, 2 dozen bunches
cello pack, 12 x 10 oz.

Estimated Number of Cases per Trailer Load

Spinach - 100 cases per trailer load.

Spinach Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	Sep	Oct - Jun	Jul
Texas		Nov - Apr	May - Jun
B.C.	Apr	May - Sep	Oct
Colorado		Jul - Nov	
Washington		May - Jun	
		Sep - Nov	

Tariff Schedule

The current tariff rate on imported spinach is free twelve months of the year.

Principal Suppliers in B.C. by Area

Lower Mainland:
B.C. Lower Mainland Farmer's Co-operative
272 East Pender Street
Vancouver, B.C.
Phone: 683-7024

SQUASH

There are many different types of squash which are produced in B.C. in varying quantities in the different regions. All three areas have some production but the Lower Mainland produces more types and a greater quantity than either Vancouver or the Interior. Squash is unregulated and most of the sales in the Lower Mainland and on Vancouver Island are grower to wholesaler direct with only a small percentage sold through roadside stands. This pattern is reversed in the Interior where most of the squash produced is sold through roadside stands.

Varieties

Black Jack and Zucco Hybrid are both soft-shell varieties while Butternut, Buttercup, Hubbard, Golden Delicious and Table Queen are hard-shelled varieties. Small Sugar and Jack O'Lantern are pumpkin varieties and Far North, Delicious 51 and Pennysweet are muskmelon varieties.

Nutrition

Soft-shell types are high in vitamin C and also contain iron, potassium and magnesium. They are low in sodium and calories. The hard-shell types are high in vitamin A and contain comparative quantities of the other minerals named above.

Merchandising and Display

Squash should be refrigerated and sprinkled. They should also be well-labelled to distinguish the different types and may be grouped with other cooking vegetables. Squash should not be stacked more than 4 deep to avoid them rolling off. Large squash can be cut into smaller pieces and wrapped since many consumers do not want to buy a whole one.

Uses

Soft-shell varieties can be used raw in salads or on vegetable plates or can be steamed a few minutes until tender. They can also be baked, pan-fried, deep-fat fried or added to soups and souffles. Hard-shell varieties can be steamed by peeling, removing the seeds and then slicing and steaming for 10 - 30 minutes, depending on the variety. The pulp can be mashed and used in pies, casseroles, souffles, custards. These varieties can also be baked and glazed.

Storage Recommendations for Squash[1]

Temperature: 45-50 F (7.2-10 C)
Relative Humidity: 70-75%

The storage life of pumpkins and squash depends largely on their type and variety. In all cases, careful handling is important because injury to the skin is likely to lead to the development of rots in storage. Curing for 2 weeks at 80-85 F (26.7-29.4 C) helps to heal minor injuries; this can be accomplished in the field, or in a storage with stoves or other sources of heat. For maximum storage life, squash should be allowed to reach full maturity before harvest and the stems should be completely removed at harvest to avoid any risk of damage in handling.

After curing, the temperature should be reduced to 44-50 F (6.7-10 C) with 70-75 percent relative humidity. Varieties like Butternut will last for 2 months, Buttercup for 3 months and Hubbard for 6 months. For best storage results, squash should be stored on slatted shelves ne layer deep without touching each other. Pumpkins generally do not store as well as the other types of squash and are seldom held longer than a few weeks.

Soft-shell squash are harvested before they reach full maturity. Their storage life is short, not exceeding 2 weeks. They are usually stored at 32 F (0 C) and in a relative humidity of 85-90 percent.

Both soft and hard-shell varieties are susceptible to freezing and chilling injury. Soft-shell varieties are also susceptible to wilting and a variety of rots including Bacterial soft rot, Blossom end rot, Phytopthora rot, Rhizopus soft rot, Fusarium rot and Cottony leak. Hard-shell varieties are subject to Hollow neck, scab and Alternaria, Black, Fusarium, Rhizopus and Soft rots.

Grade Standards in Effect for Squash

There are no grade standards presently in effect for squash.

Pack Sizes

Canadian: case, 20 lbs., 40 lbs., 50 lbs.
American: case, 20 lbs., 22 lbs., 25 lbs., 28 lbs., 30 lbs., 35 lbs., 40 lbs., 48 lbs., 50 lbs.

Estimated Number of Cases per Trailer Load

Squash - is not usually shipped in straight loads.

Squash Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	Mar	Apr - Dec	Jan
Mexico		Nov - May	Jun
B.C.	Jun	Jul - Nov	Dec
Washington	Jun	Jul - Jan	

Tariff Schedule

Current tariff rates for squash are 5 percent ad valorum B.P. (British Preferential) and M.F.N. (Most Favoured Nation) and 35 percent General tariff. These rates are in effect 12 months of the year.

Principal Suppliers in B.C. by Area

Lower Mainland: (5 acres +)
Field - Cedarvale Farms Ltd. - Richmond, 277-7486
Emma Lea Farms Ltd. - Delta, 946-1001
R.W. Featherstone - Delta, 594-8028
Greenfield Farm - Surrey, 576-9247
S.D. & L.T. Kirby - Vancouver, 224-0672
J. Law - Richmond, 274-3126
H.S. Rai Farms Ltd. - Aldergrove, 534-3831
Richfield Farm - Richmond, 874-7827

Vancouver Island: (3 acres +)
Field - Firbank Farm - Victoria, 658-8313

Interior: minor production

TOMATOES

Tomato production, both hothouse and field varies throughout the province. The major portion of hothouse tomatoes are grown in the Lower Mainland with some production on the Island and in the Interior. Field tomato production, on the other hand, is concentrated in the Interior and only minor production occurs in the other two areas. Hothouse tomatoes are a regulated commodity and sales are through the Western Greenhouse Grower's Co-operative, the Interior Vegetable Marketing Agency and the Vancouver Island Greenhouse Grower's Co-operative. Hothouse and field tomatoes are sold as fresh.

Varieties

Vedetto, Larma, Perfecto and Dombito are commonly grown hothouse varieties while Springset, Earlirouge, Supersonic, Fantastic and Early Girl are field varieties. Sweet 100 and Small Fry are cherry tomato varieties.

Nutrition

Tomatoes are rich in vitamins A and C as well as potassium and phosphorus. They are also very low in calories.

Merchandising and Display

Tomatoes are quite perishable so supplies should be rotated and turn-over should be rapid. Tomatoes should not be stacked very high or damage may occur to those underneath while those on top are likely to roll off. Refrigeration should be linked to the stage of ripeness. Both bulk and packaged tomatoes may be stocked.

Uses

Tomatoes are ideal for salads, sandwiches, soups, sauces and dressings and may also be eaten as stewed, fried or baked. Tomatoes can be used in conserves and pickles.

Storage Recommendations for Tomatoes[1]

Temperature: ripe 50 F (10 C); mature green - 55-60 F (12.8-15.6 C)
Relative Humidity: 85-90%

Tomatoes are usually harvested when mature green or partially coloured. The objective in storage after harvest is to control the rate of ripening. Temperatures below 50 F (10 C) in the field or in storage may cause damage due to chilling injury. At 50 F (10 C), the rate of colour change and the development of such effects as uneven colouring, pitting, breakdown and poor flavours are much reduced. This temperature effect is rather complex; under some circumstances no apparent damage occurs during short exposures to lower temperatures.

A temperature of 55 F (12.8 C) is recommended for slow ripening. At this temperature, most varieties keep in good condition for 2-6 weeks and change colour very slowly. At 60 F (15.6 C) the rate of colour change increases quite sharply, and above 70 F (21.1 C), the rate of maturation and other changes is increased. Tomatoes held at 65 F (18.3 C) change colour rapidly without excessive softening. Temperatures of 70 F (21.1 C) or higher induce rapid ripening and bring about changes in colour, softening and flavour.

When tomatoes are fully ripe, the holding time can be increased by reducing the temperature to 50 F (10 C). Some experiments have shown that ripe tomatoes can be held satisfactorily at 32-38 F (0-3.3 C). It has been shown, however, that some softening may occur at 35 F (1.7 C). Thus, it is generally considered hazardous to hold ripe tomatoes in storage for more than a few days.

Ethylene can be used in storage ripening rooms for uniform ripening at the market destination.

Tomatoes are susceptible to chilling injury and a number of rots in storage including Blossom end rot, Anthracnose rot, Buckeye rot, Grey mold rot, Late blight rot, Rhizopus rot and Watery rot.

Grade Standards in Effect for Tomatoes[2]

FIELD TOMATOES

71. The grades for field tomatoes are Canada No. 1, Canada No. 2, Canada No. 1 Picklers and Canada No. 2 Picklers.

Canada No. 1 Grade

72. (1) Canada No. 1 is the grade name for field tomatoes that
(a) are sound and clean;
(b) have similar varietal characteristics;
(c) are not noticeably ridged, angular or indented;
(d) are, in any individual package, of one of the following states of development, namely "mature", "turning", "semi-ripe", or "firm-ripe";
(e) are free from disease, scald, water blisters, bruises, soft areas, decay or open wet cracks;
(f) are free from damage;
(g) have
(i) a minimum diameter of 2 inches, and when packed in a closed package have, with the exception of one specimen, a maximum variation in diameter of 1 inch,
(ii) a minimum diameter of 1 1/2 inches and a maximum diameter of 2 inches and are packed in a package on which is marked the words "Small" or "1 1/2 to 2 inches", or
(iii) in the case of pear type and plum type tomatoes, a minimum diameter of 1 1/4 inches; and
(h) are properly packed.

(2) In this section, "free from damage" means that the tomatoes are free from
(a) growth cracks that are
(i) not well healed, or
(ii) well healed but exceed in aggregate length
(A) 3/4 inch if the cracks are radial from the stem end, and
(B) the circumference of a circle 1 1/4 inches in diameter if the cracks are concentric around the stem end;
(b) puffiness that causes the tomato to be distinctly light in weight;
(c) plant or stem rub affecting an aggregate area per tomato exceeding 1/2 inch in diameter;

(d) insect injury that
    (i) exceeds two well healed stings per tomato, or
    (ii) is not well healed;
(e) blossom end scars that are not reasonably smooth or are greater in diameter than one-quarter of the diameter of the tomato; and
(f) any injury or defect or a combination thereof, other than an injury or defect referred to in paragraphs (a) to (e), that materially affects the appearance, edibility or shipping quality of the tomatoes.

Canada No. 2 Grade

73. (1) Canada No. 2 is the grade name for field tomatoes that
(a) are sound and reasonably clean;
(b) have similar varietal characteristics;
(c) are, in any individual package, of one of the following states of development, namely "mature", "turning", "semi-ripe", or "firm-ripe";
(d) are free from decay, water blisters and open wet cracks;
(e) are not so misshapen or deformed as to seriously affect their appearance;
(f) are free from damage;
(g) in the case of field tomatoes, other than pear type and plum type tomatoes, have a minimum diameter of 1 1/4 inches; and
(h) are properly packed.

(2) In this section, "free from damage" means the tomatoes are free from
(a) blossom end scars that are
    (i) rough or indented, or
    (ii) exceed 5 percent of the surface area of an individual tomato; and
(b) any injury or defect or a combination thereof, other than an injury or defect referred to in paragraph (a), that seriously affect the appearance, edibility or shipping quality of the tomatoes.

Canada No. 1 Picklers

74. (1) Canada No. 1 Picklers is the grade name for immature green field tomatoes that in all other respects comply with the requirements of Canada No. 1 grade.

(2) Canada No. 1 Picklers grade for field tomatoes may be alternatively designated Canada No. 1 Pickling.

Canada No. 2 Picklers

75. (1) Canada No. 2 Picklers is the grade name for immature green field tomatoes that in all other respects comply with the requirements of Canada No. 2 grade.

(2) Canada No. 2 Picklers grade for field tomatoes may be alternatively designated Canada No. 2 Pickling.

Definition of Terms

76. (1) For the purposes of sections 72, 73, 79 and 80,
"firm-ripe" means that
(a) the field tomato shows from 75 percent to 100 percent pink or red colour, and
(b) not more than 10 percent of the field tomatoes by count are semi-ripe;

"mature" means
(a) except for field tomatoes grown in British Columbia and Manitoba, that the tomato shows a definite tinge of pink at the blossom end, and in the case of field tomatoes grown in British Columbia and Manitoba, that the tomato is fully developed, well filled out, gives a feeling of springiness when pressure is applied, is bright waxy in appearance, has seeds that are well developed and seed cavities of a jelly-like consistency, and
(b) that not more than 25 percent of the field tomatoes by count are turning in the case of tomatoes grown in British Columbia and Manitoba, and not more than 10 percent of the field tomatoes by count are turning in the case of tomatoes grown other than in British Columbia and Manitoba;
"semi-ripe" means that
(a) the field tomato shows from 25 percent to 75 percent pink or red colour, and
(b) not more than 10 percent of the field tomatoes by count are turning or firm-ripe;
"turning" means that
(a) the field tomato shows from a tinge of to 25 percent pink or red colour, and
(b) not more than 10 percent of the field tomatoes by count are mature or semi-ripe.

(2) In the grades for field tomatoes, "clean" means that the tomato is free from dirt, dust, spray residue and other foreign material.

General Tolerances

77. Notwithstanding anything in these Regulations, in the grading of field tomatoes not more than
(a) 5 percent of the field tomatoes by count may be below the minimum size,
(b) 5 percent of the field tomatoes by count may exceed the maximum size,
(c) 10 percent of the packages, when the field tomatoes are in packages, may contain field tomatoes that exceed the permitted size variation,
(d) 3 percent of the field tomatoes by count may be affected by soft areas, water blisters, open wet cracks or decay,
(e) 5 percent of the field tomatoes by count may have the same grade defect, and
(f) 10 percent of the field tomatoes by count may have grade defects other than those referred to in paragraphs (a), (b) and (c) but including those referred to in paragraphs (d) and (e),
and still meet the grade standards for a grade.

GREENHOUSE TOMATOES

78. The grades for greenhouse tomatoes are Canada No. 1, Canada No. 2 and Canada Commercial.

Canada No. 1 Grade

79. (1) Canada No. 1 is the grade name for greenhouse tomatoes that
(a) are sound and clean;
(b) have similar varietal characteristics;

(c) are, in any individual package, of one of the following states of development, namely "mature", "turning", "semi-ripe", or "firm-ripe", as defined in section 76;
(d) are not more than slightly kidney-shaped, lopsided, elongated or angular;
(e) are not sharply creased or conspicuously ridged or rough;
(f) are mature, uniformly coloured and not soft;
(g) are free from decay, disease or blotchy ripening;
(h) have a minimum diameter of 12 1/2 inches;
(i) have, when in a package, with the exception of one specimen, a maximum variation in diameter of 1 inch in the case of tomatoes with a minimum diameter of 2 inches or more, and a maximum variation in diameter of 1/2 inch in all other cases;
(j) are free from damage; and
(k) are properly packed.

(2) In this section, "free from damage" means the tomatoes are free from
(a) growth cracks that
    (i) are not well healed, or
    (ii) are well healed but exceed in aggregate length one-quarter of the diameter of an individual tomato, except that cracks occurring entirely within 1/4 inch of the stem scar will not be considered; and
(b) any injury or defect, or combination thereof, other than those referred to in paragraph (a), that materially affects the appearance, edibility or shipping quality of the tomatoes.

Canada Commercial

79. (1) Canada Commercial is the grade name for greenhouse tomatoes that
(a) have a minimum diameter of 2 1/2 inches;
(b) may be kidney-shaped, but not so creased, ridged or rough as to affect the shipping quality or seriously affect the saleability thereof; and
(c) in all other respects comply with the requirements of Canada No. 1 grade.

Canada No. 2 Grade

80. (1) Canada No. 2 is the grade name for greenhouse tomatoes that
(a) have similar varietal characteristics;
(b) are clean, sound, mature and not soft;
(c) are, in any individual package, of one of the following states of development, namely "mature", "turning", "semi-ripe", or "firm-ripe", as defined in section 76;
(d) are free from decay or badly misshapen specimens;
(e) have a minimum diameter of 1 1/2 inches;
(f) are free from damage; and
(g) are properly packed.

(2) In this section, "free from damage" means that the tomatoes are free from
(a) growth cracks that
    (i) are not well healed,
    (ii) are well healed but extend beyond the shoulder of an individual tomato, or
    (iii) are well healed but exceed in aggregate length one-half the diameter of an individual tomato;

(b) blotchy ripening that affects more than
  (i) 15 percent of the surface area of an individual tomato, or
  (ii) 15 percent of the tomatoes; and
(c) any injury or defect, or a combination thereof, other than an injury or defect referred to in paragraphs (a) and (b), that seriously affects the appearance, edibility or shipping quality of the tomatoes.

General Tolerances

81. Notwithstanding anything in these Regulations, in the grading of greenhouse tomatoes not more than
(a) 5 percent of the greenhouse tomatoes by count may be below the minimum size,
(b) 10 percent of the packages, when the greenhouse tomatoes are in packages, may contain greenhouse tomatoes that exceed the permitted size variation,
(b.1) 10 percent of the packages containing greenhouse tomatoes of Canada Commercial grade may contain tomatoes that do not meet the standards for shape of Canada Commercial grade;
(c) 1 percent of the greenhouse tomatoes by count may be affected by decay, and
(d) 5 percent of the greenhouse tomatoes by count may have grade defects other than those referred to in paragraphs (a) and (b) but including that referred to in paragraph (c),
and still meet the grade standards for a grade.

Pack Sizes

Canadian: hothouse - case, 20 lbs.
  case, baskets, 9 x 24 oz.
American: hothouse - case, 20 lbs.
  field - case, 25 lbs., 30 lbs.
    case, trays, 18 x 4
    case, baskets, 6 x 28 oz., 5 x 40 oz.
  cherry - case, baskets, 12 pint

Estimated Number of Cases per Trailer Load

Tomatoes - (2 layer flat) 1500-1600 cases per trailer load.
  - (3 layer lugs) 1350-1400 cases per trailer load.

Tomato (Hothouse) Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
B.C.	Mar	Apr - Oct	Nov

Tomato (Field) Supply to the Vancouver Wholesale Market

Areas of Supply (major to minor)	Shipping Begins	Active Supply	Shipping Decreases
California	May	Jun - Nov	Dec
Florida	Dec	Jan - May	Jun
Mexico		Nov - Apr	May

Tariff Schedule

Canadian tariffs are usually applied to imported tomatoes, n.o.p. in or around the period of May 6 to December 16. When the harvest is well underway and sufficient volume is available, the B.C. Marketing Commission makes a formal tariff application to the Canadian Horticultural Council. If the other production areas in the tariff region are in agreement, the tariff is usually put into effect within 3 - 5 working days. The tariff can be applied for 32 weeks and should be cancelled as soon as local market volumes prove insufficient. Current tariff rates on tomatoes are free B.P. (British Preferential) and 2.5 cents per pound, but not less than 15 percent ad valorum M.F.N. (Most Favoured Nation).

Principal Suppliers in B.C. by Area

Lower Mainland:
  Field (10 acres +) - Kondolay Bros. Farms Ltd. - Clearbrook, 853-9022
  Processed (10 acres +) - G.H. Ellis - Delta, 946-4393
  Hot House -
    Western Greenhouse Grower's Co-operative Association
    15350 No. 10 Highway
    Surrey, B.C.
    Phone: 576-8525

Vancouver Island:
  Field - minor production
  Processed - no production
  Hot House -
    Vancouver Island Greenhouse Grower's Co-operative
    2180 Keatting Cross Road
    Victoria, B.C.
    Phone: 652-3971

Interior:
  Field (8 acres +) - Covert Farms - Oliver, 498-2731
    H.R. McDonald - Cawston, 499-5810
    Riclaur Farms Ltd. - Oliver, 495-2778
    Yamada Bros. - Vernon, 542-7184
  Process - no production
  Hot House -
    Interior Vegetable Marketing Agency Ltd.
    2908-31st Avenue
    Vernon, B.C.
    Phone: 545-5100
    545-0694

TABLE 1:

Recommended storage temperatures, relative humidities, storage life expectancies, and the highest freezing points of fresh vegetables

Vegetable	Temperature (°F)	(°C)	Relative humidity (%)	Approximate length of storage period	Highest freezing point (°F)	(°C)
Asparagus	32	0.0	95	3 weeks	30.9	−0.6
Beans,						
green or snap	45-50	7.2-10.0	85-90	8-10 days	30.7	−0.7
lima (shelled or unshelled)	32	0.0	85-90	2 weeks	31.0	−0.6
Beets, bunched	32	0.0	90-95	10-14 days	31.3	−0.4 (tops)
topped	32	0.0	90-95	1-3 months	30.3	−0.9
Broccoli (Italian or sprouting)	32	0.0	90-95	1 week	30.9	−0.6
Brussels sprouts	32	0.0	90-95	3-4 weeks	30.5	−0.8
Cabbage, early	32	0.0	90-95	3-4 weeks	30.4	−0.9
late	32	0.0	90-95	3-4 months	31.7	−0.2
Carrots, bunched	32-34	0.0-1.1	95	2 weeks		
topped	32-34	0.0-1.1	95	4-5 months	29.5	−1.4
Cauliflower	32	0.0	90-95	2 weeks	30.6	−0.8
Celery	32	0.0	95+	3 months	31.8	−0.2
Corn, sweet	32	0.0	90-95	8 days	30.9	−0.6
Cucumbers	45-50	7.2-10.0	95	10-14 days	31.1	−0.5
Eggplants	45-50	7.2-10.0	85-90	10 days	30.6	−0.8
Endive or escarole	32	0.0	90-95	2-3 weeks	31.4	−0.3
Garlic, dry	32	0.0	70-75	6-8 months	30.5	−0.8
Horseradish	30-32	−1.1 to 0.0	90-95	10-12 months	28.7	−1.8
Kohlrabi	32	0.0	90-95	2-4 weeks	30.2	−1.0
Leeks, green	32	0.0	90-95	1-3 months	30.7	−0.7
Lettuce	32	0.0	95	Head lettuce 2-3 weeks	31.7	−0.2
Melons,						
cantaloupe or muskmelon	32-45	0.0-7.2	85-90	2 weeks	30.5	−0.8
honeydew	45-50	7.2-10.0	85-90	2-3 weeks	30.1	−1.1
watermelons	36-40	2.2-4.4	85-90	2-3 weeks	31.3	−0.4
Mushrooms, cultivated	32	0.0	85-90	5 days	30.4	−0.3
Onion sets	32	0.0	70-75	5-7 months		
Onions, dry	32	0.0	50-70	5-9 months	30.4	−0.3
Parsnips	32	0.0	95	2-4 months	30.4	−0.3
Peas, green	32	0.0	95	1-2 weeks	29.9	−1.2
Peppers, sweet	45-50	7.2-10.0	85-90	8-10 days	30.7	−0.7
Potatoes,						
early-crop	see text		85-90	1-3 weeks	30.3	−0.9
late-crop	see text		85-90	see text	30.3	−0.9
Pumpkins	45-50	7.2-10.0	70-75	2-3 months	30.5	−0.8
Radish,						
spring, bunched	32	0.0	90-95	2 weeks	31.3	−0.4
winter	32	0.0	90-95	2-4 months	30.7	−0.7
Rhubarb	32	0.0	90-95	2-3 weeks	30.3	−0.3
Rutabaga or turnip	32	0.0	90-95	6 months	30.1	−1.1
Salsify	32	0.0	90-95	2-4 months	30.4	−0.9
Spinach	32	0.0	90-95	10-14 days	31.5	−0.3
Squash, summer	45-50	7.2-10.0	70-75	2 weeks	31.1	0.5
winter	45-50	7.2-10.0	70-75	6 months	30.7	0.7
Sweet potatoes					30.1	−1.1
Tomatoes, ripe	50	10.0	85-90	3-5 days	31.1	0.5
mature green	55-60	12.8-15.6	85-90	2-6 weeks	30.5	−0.8

Source: Commercial Storages of Fruits and Vegetables, Agriculture Canada, Publication 1532, 1974.

TABLE 2:

Protecting Fresh Produce During Truck Transit

(From Agriculture Handbook 105, U.S. Department of Agriculture)

Product	Recommended transit temperature	Desired relative humidity	Highest freezing point	Top-ice and/or package-ice preferable
	F.	*Percent*	*F.*	
Fresh fruits and vegetables:				
Apples	30 - 40 (depending on variety)	90	27.2 (Stayman) 30.0 (Red Delicious)	No.
Apricots	31 - 32	90	30.1	No.
Artichokes (globe)	32	90 - 95	29.9	Yes.
Asparagus	32	90 - 95	30.9	No.
Avocados:				
Cold-tolerant varieties	40	85-90	31.5	No.
Cold-intolerant varieties	55	85 - 90	31.5	No.
Bananas:				
Gros Michel variety	55 - 57	90 - 95	30.6	No.
Other varieties	56 - 60	90 - 95	30.6	No.
Beans:				
Green or snap	45 - 50	90 - 95	30.7	No.
Lima, in pods	32 - 40	90	31.0	No.
Beets	32	90 - 95	30.3	Yes.
Beet tops	32	90 - 95	31.3	Yes.
Blackberries	31 - 32	90 - 95	30.5	No.
Blueberries	32	90 - 95	29.7	No.
Broccoli (Italian or sprouting)	32	90 - 95	30.9	Yes.
Cabbage	32	90 - 95	30.4	Yes.
Cantaloups	32 - 34	85 - 90	29.9	Yes.
Carrots:				
Topped	32	90 - 95	29.5	Yes.
Prepackaged	32	80 - 90	29.5	Yes.
Cauliflower	32	90 - 95	30.6	Yes.
Celery	32	90 - 95	31.1	Yes.
Cherries:				
Sweet	31 - 32	90	28.8	No.
Sour	31 - 32	90	29.0	No.
Corn (sweet)	32	90 - 95	30.9	Yes.
Cranberries	36 - 40	90 - 95	30.4	No.
Cucumbers	45 - 50	90 - 95	31.1	No.
Eggplants	45 - 50	90	30.6	No.
Endive (escarole)	32	90 - 95	31.9	Yes.
Grapefruit	50 - 60	85 - 90	30.0	No.

Source: *The Packer's 1978 Produce Availability and Merchandising Guide*, The Packer, June 1978.

Table 2 - cont'd.

Product	Recommended transit temperature F.	Desired relative humidity Percent	Highest freezing point F.	Top-ice and/or package-ice preferable
Fresh fruits and vegetables — Continued:				
Grapes:				
American type	31 - 32	85 - 90	29.7	No.
European type (Vinifera)	30-31	90 - 95	28.1	No.
Kale	32	90 - 95	31.1	Yes.
Lemons	50 - 55	85 - 90	29.4	No.
Lettuce	32	95	31.7	Yes.
Limes	48 - 50	85 - 90	29.1	No.
Melons:				
Honeydew, Casaba, Crenshaw, and Persian	45 - 50	85 - 90	30.5	No.
Mushrooms	32	90	30.4	No.
Okra	45 - 50	90 - 95	28.7	No.
Onions (dry)	32	65 - 70	30.6	No.
Onions (green)	32	90 - 95	30.4	Yes.
Shallots	32	90 - 95	31.6	Yes.
Leeks	32	90 - 95	30.3	Yes.
Oranges	[1] 40 - 44	85 - 90	30.6 (flesh) 29.7 (peel)	No.
Parsley	32	90 - 95	30.0	Yes.
Parsnips	32	90 - 95	30.4	Yes.
Peaches and Nectarines	31 - 32	90	30.4	No.
Pears	[2] 29 - 31	90 - 95	29.2	No.
Peas (green, in pods)	32	90 - 95	30.9 (pods) 29.9 (shelled)	Yes.
Peppers	45 - 50	90 - 95	30.7	No.
Pineapples:				
Mature-green fruit	50 - 60	85 - 90	30.2	No.
Ripe fruit	45	85 - 90	30.0	No.
Plums and fresh Prunes	31 - 32	90 - 95	30.5	No.
Potatoes:				
Early-crop for table	50 - 60	90	30.9	No.
Early-crop for chipping	65 - 70	90	30.9	No.
Late-crop for table	40 - 50	90	30.9	No.
Late-crop for chipping	50 - 60	90	30.9	No.
Radishes	32	90 - 95	30.7	Yes.
Raspberries	31 - 32	90 - 95	30.0 (black) 30.9 (red)	No.
Rhubarb	32	95	30.3	No.
Romaine	32	90 - 95	31.7	Yes.
Spinach	32	90 - 95	31.5	Yes.
Squash and Pumpkins:				
Winter and pumpkins	50 - 55	50 - 75	30.5	No.
Summer	32 - 50	90	31.1	No.
Strawberries	32	90 - 95	30.6	No.
Sweetpotatoes	55 - 70	85 - 90	29.7	No.
Tangerines	32 - 38	85 - 90	30.1	No.
Tomatoes:				
Mature-green	55 - 65	85 - 90	31.0	No.
Pink	45 - 50	85 - 90	31.1	No.
Watermelons	55 - 70	80 - 85	31.3	No.
Poultry and Eggs:				
Poultry				
Fresh ice-packed	32 - 34	90 - 95	[3] 27.0	Yes.
Fresh-chilled	28 - 32	90 - 95	[3] 27.0	No.
Shell eggs	35 - 40	80 - 85	[3] 28.0	No
Dairy Products:				
Butter:				
Fresh	32 - 40	80 - 85	—	—
Frozen	— 10 - 0	—	—	—

TABLE 3:

Produce temperature & display guide

The following two charts depict what is considered to be the ideal temperature for maintaining produce during display periods. Also included are instructions as to whether or not the particular commodity benefits from sprinkling. The charts are divided into two distinct areas, those commodities which require temperatures below 50 degrees Fahrenheit and those which require temperatures above this mark.

Items where ideal temperature is 50° F or under

Item	Ideal Temperature	Sprinkle	Item	Ideal Temperature	Sprinkle
Apples	32-35°	None	Leeks	32-35°	Yes
Apricots	32-35°	None	Lemons	40-50°	Lightly
Artichokes	32-35°	Lightly	Lettuce	32-35°	Lightly
Asparagus	32-35°	Lightly	Limes	40-50°	Yes
Avocados (Ripe)	40-50°	None	Melons (Ripe)	40-50°	None
Beans (Lima)	32-35°	Yes	Mushrooms	32-35°	None
Beans (Snap)	45-50°	Lightly	Nectarines (Ripe)	32-35°	None
Beets	32-35°	Yes	Okra	40-50°	None
Berries	32-35°	None	Onions (Green)	32-35°	Lightly
Broccoli	32-35°	Lightly	Oranges	32-35°	None
Brussels Sprouts	32-35°	Yes	Parsnips	32-35°	Yes
Cabbage	32-35°	Yes	Peaches (Ripe)	32-35°	None
Carrots	32-35°	Lightly	Pears (Ripe)	32-35°	None
Cauliflower	32-35°	Lightly	Peas	32-35°	Lightly
Celery	32-35°	Yes	Peppers	40-50°	Lightly
Cherries	32-35°	None	Persimmons	32-35°	None
Collards	32-35°	Yes	Pineapple (Ripe)	40-50°	None
Corn	32-35°	Yes	Plums	32-35°	None
Cranberries	40-50°	None	Radishes	32-35°	Yes
Cucumbers	40-50°	None	Rhubarb	32-35°	Yes
Dates	32-35°	None	Shallots	32-35°	Yes
Eggplant	40-50°	Yes	Spinach	32-35°	Yes
Endive & Escarole	32-35°	Lightly	Squash (Summer)	40-50°	None
Figs	32-35°	None	Tangerines	32-35°	Lightly
Grapefruit	32-40°	None	Tomatoes (Ripe)	40-50°	None
Grapes	32-35°	None	Turnips	32-35°	Yes
Kale	32-35°	Yes	Watermelons	32-35°	None

Items where ideal temperature is 50° F or above

Item	Ideal Temperature	Sprinkle	Item	Ideal Temperature	Sprinkle
Avocados (Unripe)	65-70°	None	Pears (Unripe)	60-70°	Lightly
Bananas (Unripe)	65-70°	None	Pineapple (Unripe)	65-70°	None
Bananas (Ripe)	55-60°	None	Potatoes	65-75°	None
Mangoes	55-50°	None	Pumpkins	55-60°	None
Melons (Unripe)	65-60°	None	Squash (Winter)	55-60°	None
Nectarines (Unripe)	65-75°	None	Sweet Potatoes	55-60°	None
Onions (Dry)	65-70°	None	Tomatoes (Unripe)	60-70°	None
Peaches (Unripe)	65-70°	None			

Source: The Packers 1978 Produce Availability and Merchandising Guide, The Packer, June 1978.